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Thomas Dover 1662-1742

Physician, Privateering Captain, and Inventor of Dover's Powder

D. N. PHEAR*

FEW medical men have lived more eventfully than Dr. Thomas Dover, the Bristol physician, whose name is enshrined in Dover's Powder. Obstinate, boastful, and quarrelsome he was, but generous to the poor, devoted to his friends, and venturesome enough, at the age of forty-six, to sail on a voyage of plunder to the Spanish Main where he shared in the rescue of Robinson Crusoe.

Early Life

Dover came of a respected Cotswold family. His grandfather, Robert Dover (1575-1652), settled as an attorney in the small Warwickshire town of Barton-on-Heath; he was a cheerful, generous man, and the founder of the Dover's Games, an athletic contest held on Dover's Hill, near Chipping Campden, each year. Robert's second son, John, was born in 1614; he fought in the Civil War as one of Prince Rupert's Captains, and then settled in Barton, farming Shirley Farm (Fig. 1), opposite the Church. Here Thomas Dover was born in 1662, the seventh of eight children.

Thomas was baptised in Barton Church on 6 May 1662. Nothing more is known of him until 1680, when he entered Magdalen Hall, Oxford. He matriculated there on 1 December 1680 and spent six years at Oxford, taking his B.A. in 1684. In 1686 he moved to Gonville and Caius College, Cambridge, where this entry appears in the register of admissions: "Dover, Thomas. Admitted pensioner to the scholars' table, Nov. 4, 1686. Surety, Mr. Lightwine."[1] Dover was probably attracted to Caius by the College's medical reputation and by the eminence of its Master, Dr. Robert Brady; Brady was the Regius Professor of Physic and twice M.P. for the University, a Fellow of the Royal College of Physicians, and Physician-in-Ordinary to Charles II and James II, as well as being a distinguished historian. He was much in attendance on the King, for which he was paid "for his ryding charges

* Bland Sutton Institute, Middlesex Hospital, London.

1 Venn, J. *Biographical history of Gonville and Caius College.* Cambridge University Press, 1897, Vol. I, p. 481. (It was then the practice for tutors to guarantee payment of their pupils' debts.)

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and other expenses for himself, his men and horses at the usuall rate of 25s. by the day."[2] He was a friend of Sydenham and may have arranged for Dover to study under him. Dover graduated M.B. in 1687,[3] at the same ceremony as Dr. Elias Daffy of Elixir fame.

Dover married soon after leaving Cambridge, but of his wife we know only that her name was Joanna, and that she was buried at Barton on 27 April 1727. About the time of his marriage Dover worked in London with Sydenham, living with him as a resident pupil, and for the rest of his life Dover had a great regard for his master; in his book, *The Ancient Physician's Legacy to his Country*, he often supports his argument with "a Saying of that good and truly honest Man, Dr Sydenham."

> Whilst I lived with Dr *Sydenham*, I had myself the Small-Pox, and fell ill on the Twelfth-Day. In the Beginning I lost Twenty-two Ounces of Blood. He gave me a Vomit; but I find by Experience, Purging much better. I went abroad, by his Direction, till I was blind. and then took to my Bed. I had no Fire allow'd in my Room, my Windows were constantly open, my Bed-Clothes were order'd to be laid no higher than my Waist. He made me take twelve Bottles of Small-Beer, acidulated with Spirit of Vitriol, every Twenty-four Hours.

In spite of all this, Dover recovered![3]

For the next ten years we know nothing of Dover's career; by 1697 he was practising in Bristol and in that year he was the first doctor to offer his services to the newly formed Board of Poor Law Guardians: "Dec.1697. It being represented to this court by Mr Edward Hacket and Mr James Millard that Dr Thomas Dover hath offered himself to be Phisitian to the new Workhouse gratis, this court doth accept of him as such and do order that the said Mr Hacket and Mr Millard do give him notice thereof and also that this court doth thank him for the same." The "new Workhouse" was St Peter's Hospital (Fig. 2), a beautiful, timbered Tudor building, sadly destroyed in the bombing of Bristol in the Second World War. Dover writes of treating typhus there:

> This Fever raged much in *Bristol*, so that I visited from twenty-five to thirty Patients a Day for a considerable Time, besides their poor Children in their Workhouse, where I engaged myself, for the Encouragement of so good and charitable an Undertaking, to find them Physick, and give them Advice at my own Expence and Trouble, for the two first Years. All these

2 Venn, J. *Caius College*. Reprinted at Cambridge University Press, 1923, p. 145.

3 Dover, Thomas. *The ancient physician's legacy to his country. Being what he has collected himself, in fifty-eight years of practice*. 6th ed., London, 1742, pp. 119-120.

FIG. 1. (above) Front of Shirley Farm, Barton-on-Heath; (below) Farmyard.

FIG. 2. St. Peter's Hospital, Bristol. (*British Railways.*)

poor Children in general had this Fever, yet no more than one died out of the whole Number, which was near two hundred.[4]

Bristol was then a centre of fashion and a popular spa; Defoe was told by a local doctor that its warm limestone springs "are excellent in all scorbutic and nervous Atrophies, In Hectics, weak Lungs, all Inflammations in whatever Part, all preternatural Evacuations; in short, in all acrid Juices, and viscid Blood being a natural simple *Alcali;* and in the first Stages of a *Phthisis pulmonum,* and if early had recourse to, and long continued, under a low, cooling nutritive Regimen, they would probably stop the Growth and Cause of most chronical Distempers."[5] But Bristol was also "the greatest, the richest and best Port of Trade in Great Britain, London only excepted," and Dover must have met many seamen and merchants trading with distant lands, and must often have treated wounds and fevers contracted on long voyages. And so, being a rich man, he came to take a share in financing a privateering expedition, and to set out on a voyage of remarkable boldness; in small ships, with poor charts and with little knowledge of the seas they visited, and with a motley, rebellious crew, he and his companions successfully plundered an enemy coast, and brought their expedition safely back round the globe.

The Voyage to the South Sea

In 1708 England, Holland, and Austria were at war, ranged against France and Spain. This, the War of the Spanish Succession, was the second part of our long struggle with the France of Louis XIV which had lasted from 1689 to 1697 and, flaring up again in 1702, was to drag on till the Treaty of Utrecht in 1713. We fought to avoid the closing of South America, the Netherlands, Spain, and the Mediterranean to our trade; also the English Throne was threatened by Louis' support of James II, and of his son, the Old Pretender. In 1702 Louis declared his grandson, Philip, to be the new king of Spain; this meant that Louis would control the Spanish Netherlands, and threaten our seatrade, and we took up arms to prevent it.

Such was the situation in 1708 when Capt. Woodes Rogers, a sea captain of Bristol, proposed to a group of Bristol merchants that they should fit out an expedition to raid the Spanish settle-

[4] Dover, Thomas, *op. cit.,* pp. 107-108.

[5] Defoe, Daniel (anon.). *A tour thro' the whole island of Great Britain.* 4th ed., London, 1748, vol. II, p. 311.

ments in South America. Rogers tells us in his Journal[6] that he was determined to break the enemy's monopoly in the South Sea trade, and he hoped that, by attacking enemy commerce there, he would help to shorten the war as well as reap a rich harvest of plunder. He found ready support among the Merchant Adventurers, and a group of twenty contributed, Dover taking a considerable share. Two "private Men of War" were equipped, the *Duke,* 320 tons burden, mounting 30 guns and with a crew of 180, and the *Dutchess,* 260 tons, with 26 guns and 150 men. These were small, deep, oak ships, about 25-foot beam, and 80-foot keel; they mounted three masts, each with two or three square sails. Their armament consisted of clumsy muzzle-loading cannon, fired through gun-ports in the vessels' sides; cannon-fire was so inaccurate that it was only effective at a quarter-mile or less, though the shot would carry a mile. For the size of the ships, crews were very large, and the men lived in cramped and airless quarters on the gun-deck, or in the orlop below it. The standard food for a long voyage was biscuit, thick, hard and weevilly, and salt meat described as "fibrous, shrunken, gristly and glistening with salt crystals"; it was often rotten, or so hard that it could be carved and polished "like some close-grained wood." Under such conditions scurvy was rife, and other common afflictions were dysentery, typhus, and obstinate, widespread ulcers.

Woodes Rogers, then twenty-nine years old, was to command the expedition in the *Duke,* with Dover as his Second Captain and Captain of Marines. Captain Courtney was in command of the *Dutchess,* with Captain Cooke as his Second Captain. William Dampier, the Pilot for the South Seas, was a great asset to them, for he had been there three times already, and round the world twice. Dover went primarily as an owner, but he also helped with the medical side of the expedition; with him, as his lieutenant "if we landed a party," was his nephew, Samuel Hopkins, an apothecary. All plans and "discontents" were to be debated by a Council of senior officers, who appointed Dover as President with a casting vote "in cases of equality." Two-thirds of the value of any prizes was to go to the owners, and one-third to the members of the

[6] The following account of the voyage is based on the excellent first-hand Journals of two of the captains:

Woodes Rogers. *A cruising voyage round the world.* First published 1712. Page references will be given to the recent edition in *The Seafarers' Library,* London, Cassell, 1928, Ed. G. E. Manwaring, xlvi, 320 pp., 8pl.

Cooke, Edward. *A voyage to the South Sea, and round the world.* London, 1712, 2 vols., 456 and 328 pp.

expedition; agents were sent abroad each ship to "prevent imbezelling or concealing" of treasure.

Rogers was instructed "to make all imaginable Haste to be gone," and he sailed in convoy from Bristol on 1 August 1708. They called at Cork to take on more provisions and were glad to recruit more seamen here, for they had a crew of "Tinkers, Taylors, Pedlers, Fiddlers etc.," one-third of them foreigners, and not more than twenty sailors in each ship. "Our Crew were continually marrying whilst we staid at Cork, tho they expected to sail immediately. Amongst others there was a Dane coupled by a Romish Priest to an Irish-Woman without understanding a word of each other's Language: yet I perceived this Pair seem'd more afflicted at Separation than any of the rest."[7] Most couples drank a tot together and parted very merrily!

"Sept. 1. Sailed with Hastings Man-of-War and 20 merchant ships for the Canary Islands, very much crouded" with men, cables, bread, and watercasks. They parted company from the convoy on 6 September; on 18 September at 5 a.m. a small Spanish bark was sighted, and caught after a two-hour chase. "Among the Prisoners were four Fryars and one of them a good honest old Fellow. We made him heartily merry, drinking King Charles the Third's Health; but the rest were the wrong sort."[8] Taking into consideration "the excessive Cold going round Cape Horne," the Council decided "to cruise a little among the Canary Islands for liquor," as "good liquor to Sailors is preferable to Clothing." Their prize was carried into Oratava, where she was ransomed, and at parting Rogers gave the old friar a cheese. The Spaniards were very inquisitive, suspecting "we designed for the South Sea," but Rogers gave out that they were bound for the British West Indies. And so they sailed for the Cape Verde Islands "indifferently well stocked with liquor."

"Sept.25. This Day, according to custom, we duck'd those that had never passed the Tropick before. The Manner of doing it was by a Rope thro a Block on the Main-Yard, to hoist 'em half way up to the Yard and let 'em fall at once into the Water. This prov'd of great use to our fresh-water sailors to recover the colour of their Skins which were grown very black and nasty" (Fig. 3).[9]

[7] Woodes Rogers, *op. cit.*, p. 5.

[8] W. R., p. 11. Rogers refers to the Archduke Charles of Austria, whom the Allies proposed in 1703 to make King of Spain, as Charles III.

[9] W. R., p. 17.

On 30 September they dropped anchor in the Bay of St. Vincent in the "Cape de Verd Islands," where the water-casks were landed to have "'em burnt and clean'd in the Inside, being oil-casks; and for want of cleaning, our Water stunk insufferably." Here they fished and stocked up with wood and water, and with "Limes, Tobacco, Oranges, Fowls, Potatoes, Hogs, Bonanoes, Musk and Water-Melons" and "2 good black Cattel" bought cheaply from the islanders. "In the Woods there are abundance of large Spiders, as big as a Wall-Nut, and their webs very troublesome to get thro', being as strong as ordinary Thread, and very many of them."[10]

They left St. Vincent on 8 October and on 19 November anchored at the Isle of Grande, off the coast of Brazil, where the Portuguese gave them a great welcome. On 27 November some of the officers went to the town of Angre de Reys to join in a religious procession. First there was a church service at which the music was provided by the singing of the Franciscan Fathers, and by an English band of two trumpets and a haut-boy up in the gallery; "our Musick played 'Hey Boys, up we go!' and all manner of paltry tunes." Then the officers marched in procession, each carrying "a long Wax-Candle lighted," and the festivities ended with a great banquet given by the Portuguese governor.

The ships were careened and restocked, and on 3 December they set out on the arduous six-thousand-mile voyage to Juan Fernandez. As they came south towards Cape Horn, they met a succession of gales and cold raw weather. Guns were stowed away in the holds "to make the ships lively," and six sailors were at work making warm clothes for the men.

"Jan.1,1708/9. Fresh Gales of Wind. This being New-Year's Day, I had a large Tub of Punch hot on the Quarter-Deck, where every Man in the Ship had above a Pint to his Share, and drank our Owners and Friends Healths in Great Britain, to a happy New Year, a good Voyage, and a safe Return."[11]

Dampier brought them far south, thinking Cape Horn safer than the Straits of Magellan, with their strong tides and narrow sea-room.

"Jan.10. We have no Night here. Lat.61.53. being the furthest we run this way, and for ought we know the furthest that any one has yet been to the Southward. We now account ourselves in the *South-Sea,* having got round Cape *Horne.*"[12]

10 Cooke, E., *op. cit.,* vol. I, p. 13.
11 W. R., p. 78.
12 W. R., p. 80.

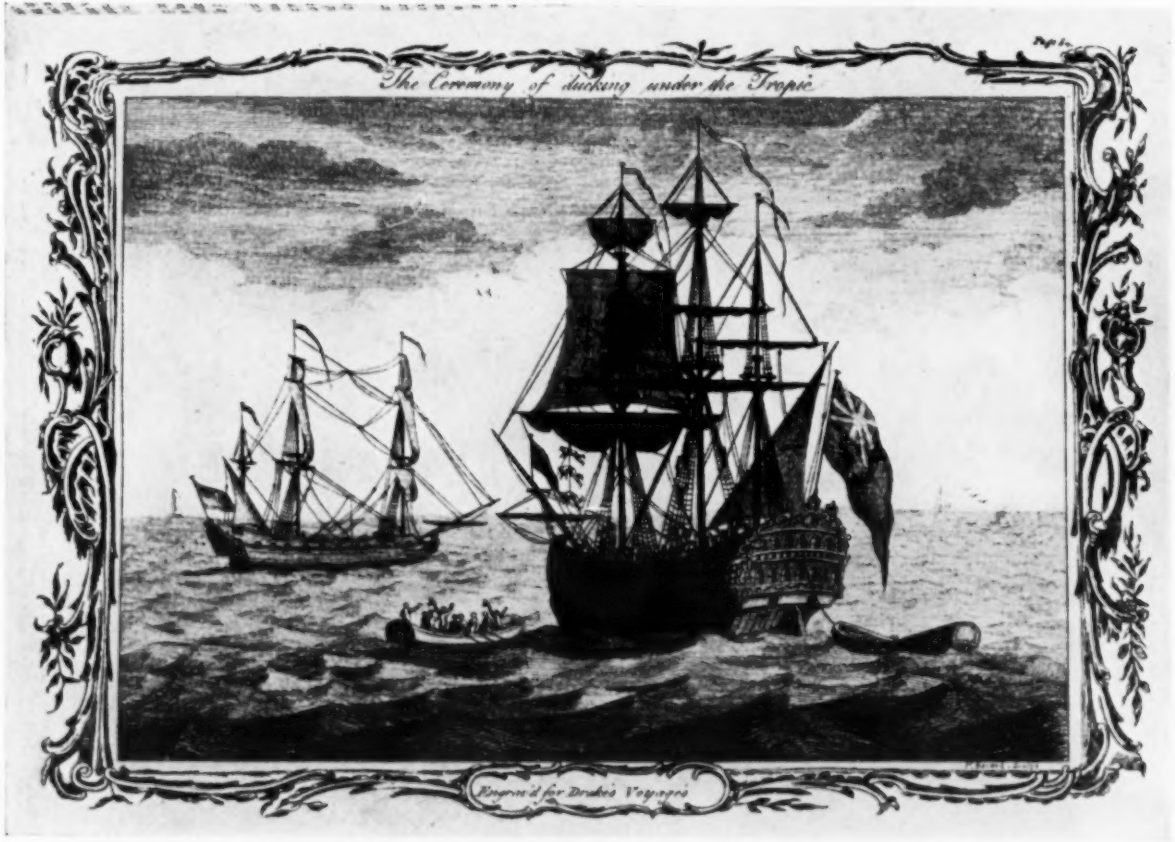

FIG. 3. The *Duke* and *Dutchess* on the Equator. (*British Museum Library.*)

FIG. 4. Stanway House, Gatehouse and Forecourt. (Copyright *Country Life*.)

The Landing on Juan Fernandez

Many of the crew were ill from cold and scurvy and it was essential to find a harbour quickly to refresh the sick, so Rogers decided to make for the island of Juan Fernandez; their charts differed as to its situation, and for a time they were "in doubts of striking it," but on 31 January land was sighted, and Dover set out for the shore. When he was about a league from land, he saw a fire blaze up in the twilight, and he immediately "bore away for the Ships" thinking there were French men-of-war in the bay. Next morning, cleared for action, the *Duke* and *Dutchess* stood into the bay, but found it empty, and Dover was sent off again with seven armed men. He soon returned, bringing a man clothed in goat-skins, Alexander Selkirk of Largs in Ayrshire, who had been left on the island more than four years ago by the ship *Cinque-Ports*. Selkirk had quarrelled with his captain and thinking the ship unseaworthy had preferred to be left behind; he it was who had lit the fire the previous evening.

> He had with him his Clothes and Bedding, with a Firelock, some Powder, Bullets, and Tobacco, a Hatchet, a Knife, a Kettle, a Bible, some practical Pieces, and his Mathematical Instruments and Books. For the first eight Months he had much ado to bear up against Melancholy. He built two Hutts with Piemento Trees, cover'd them with long Grass, and lin'd them with the Skins of Goats, which he had killed with his Gun, so long as his powder lasted, which was but a pound: and that being near spent, he got fire by rubbing two sticks of Pimento Wood together upon his knee. In the lesser Hutt he dressed his Victuals, and in the larger he slept, and employ'd himself in reading, singing Psalms, and praying; so that he said he was a better Christian while in this Solitude than ever he was before or (than, he was afraid, he) should ever be again. He might have had Fish enough, but could not eat 'em for want of Salt, because they occasioned a Looseness; except Crawfish, which he boil'd as he did his Goat's Flesh: he kept an Account of 500 kill'd while there, and caught as many more, which he mark'd on the Ear and let go. When his Powder fail'd, he took them by speed of foot, for he ran with wonderful Swiftness. In the Season he had plenty of good Turnips, which had been sow'd there by Capt. *Dampier's* men, and have now overspread some Acres of Ground; he had enough of good Cabbage from the Cabbage-Trees. He was at first much pester'd with Cats and Rats, that had bred in great numbers from some which had got ashore from Ships. The Rats gnaw'd his Feet and Clothes while asleep,"[13] so he tamed some cats with goat's meat and soon they would lie about him in hundreds, and keep off the rats. On first coming on board, his speech was almost unintelligible from long disuse, for he seem'd to speak his words by halves.

Dampier had been with Selkirk on the *Cinque-Ports*, and recommended him strongly, so he was at once appointed Mate of the *Duke*.

13 W. R., pp. 92-94.

Next day tents were set up on shore for the sick men, and the sailmakers and coopers started repair work. Selkirk caught two or three goats each day, and the scurvy patients rapidly recovered on a diet of meat, with turnip-tops and water-cress. Wood and water were replenished and on 13 February they sailed north along the coasts of Chile and Peru to begin the real business of the expedition.

THE RAIDING OF THE SPANISH COAST

The next two months were spent cruising off the Peruvian coast, where they captured five valuable enemy vessels. Early in April the Council decided "to land and attempt Guiaquil," and they headed for Guiaquil Bay; two small barks were fitted out for the landing, and in these the landing parties stood into the bay, leaving the ships to seaward to avoid the enemy spotting them and giving the alarm. Three landing parties were arranged under Dover, Rogers, and Courtney, with "the best and soberest Men we could pick to command every ten Men under the Captains." At daybreak on 20 April they attacked and took the Island of Puna, at the mouth of the Guiaquil River; here they found a letter to the Spanish governor warning him of the English squadron and telling him of French frigates fitting out against them, "which gave us some Uneasiness."

Guiaquil, then a town of about two thousand souls, lies seven leagues upstream from Puna; on 21 April they came halfway up the wide, tidal river towards the town and then lay hid under the mangroves awaiting the next tide. "It was very hot, and we were pester'd and stung grievously by the Muskitoes: but in regard we are about a charming Undertaking, we think no Fatigue too hard."[14] At six in the evening they continued upstream with the tide, and by midnight were off the town with 110 men. But "we saw a great Fire on the Hill" and the town full of lights, with bells and gunfire sounding the alarm, so, after "about an Hour spent in Debate," the attack was put off. Dover was strongly against risking a landing, and they remained on the river threatening the town for two days while they treated with the Corregidore for its ransom. A sum of fifty thousand pieces of eight[15] was demanded, but the town could only raise thirty thousand, so Rogers broke off the negotiations and seventy men with guns were landed, under cover of a bombardment from the landing-craft. The Spaniards

[14] W. R., p. 122.
[15] A piece of eight was worth about five shillings.

had probably five hundred horse and foot militia near the town, but they put up a very poor fight and within an hour the English were masters of the place. Dover was stationed to keep guard in a church at the far end of the town, and "the Enemy were almost continually popping at him all Night" from the surrounding woods, but were not bold enough to attack. They stayed in Guiaquil, skirmishing with the Spaniards, until a ransom of thirty thousand pieces was agreed; and then, on 27 April, they sailed down the river taking "230 Bags of Flower" and grain, sugar, oil, arms, and jewelry, "very cheerfully" but disappointed at not having surprised the Spaniards before they had a chance to hide their gold and silver. Early in the morning of 8 May they left Puna "being resolved to make the utmost Dispatch for the Galapagos Islands" to avoid the French ships which were preparing a counter-attack.

"May.11. We had upwards of 20 Men that fell ill within these 24 Hours, and our Consort near 50, of a malignant Fever, contracted as I suppose at *Guiaquil,* where I was informed, that about a Month or 5 Weeks before we took it, a contagious Disease which raged there swept off 10 or 12 Persons every day for a considerable time; so that the Floors of all the Churches were fill'd so fast, that they were obliged to dig a large and deep Hole, close by the great Church, where I kept Guard; and this Hole was almost fill'd with Corps half putrified. Our lying so long in the Church surrounded with such unwholesom scents was enough to infect us too."[16] Capt. Courtney was taken ill and Dover went on board the *Dutchess* to prescribe for him. Years later Dover wrote of this epidemic: "In a very few Days after we got on board, one of the Surgeons came to me, to acquaint me, that several of my Men were taken after a violent Manner, with that Languor of Spirits, that they were not able to move."[17] Within 48 hours there were 180 plague cases, with buboes and the dreaded ecchymoses or "tokens"; in this desperate situation Dover applied the great principle of cure by contraries in a most determined manner:

> I order'd the Surgeons to bleed them in both Arms, and to leave them bleeding till all were blooded, and then come and tie them up in their Turns. Thus they lay bleeding and fainting, so long, that I could not conceive they could lose less than an hundred Ounces each Man. I began to consider, that the Plague was no more than a Fever of the most exalted kind; and so *'Duro huic nodo durior adhuc cuneus adhibendus.'* A fever we define to be *'Aucta sanguinis Fermentatio sanguini et humoribus in-*

[16] W. R., p. 150.
[17] Dover, Thomas, *op. cit.*, p. 101.

ducta.' The only Intention of Healing, must be to abate that preternatural Fermentation, and resist Putrefaction, which must be by large Quantities of cooling and diluting Liquors. We had on board Oil and Spirit of Vitriol sufficient, which I caused to be mixed with Water to the Acidity of a Lemon, and made them drink very freely of it; so that notwithstanding we had one hundred and eighty-odd down in this most fatal Distemper, yet we lost no more than seven or eight; and even these owed their Deaths to the strong Liquors which their Mess-Mates procured for them.[18]

May.15. At 6 last Night Mr. *Samuel Hopkins,* Dr *Dover's* Kinsman and Assistant, died: he read Prayers once a Day ever since we pass'd the Equinox in the North Sea: He was a very good temper'd sober Man, and very well beloved by the whole Ship's Company.[19]

May.23. There is hardly a Man in the Ship, who had been ashore at *Guiaquil,* but has felt something of this Distemper, whereas not one of those that were not there have been sick yet. Our Surgeons make heavy Complaints for want of sufficient Medicines, with which till now I thought we abounded, having a regular Physician, an Apothecary, and Surgeons enough, with all sorts of Medicines aboard.[20]

They were unable to find water in the Galapagos Islands, and so turned back to the mainland, and reached the island of Gorgona, off the Peruvian coast, on 7 June. Many of their men were ill and they were in no condition to engage the enemy who, they thought, "is out after us. Everything looks dull and discouraging: the little English bread we have left is eaten as hollow as a Honeycomb, and so full of Worms, that it's hardly fit for Use. But it's in vain to look back or repine in these Parts."[21] At Gorgona was water and good fishing; the sick were taken ashore, where most recovered, helped perhaps by a diet of monkey "Fricassees and Broth." The ships were careened and caulked, and one of the prizes, the *Havre de Grace,* was renamed the *Marquis* and fitted with twenty guns to join the squadron, though Captain Cooke, her commander, later found her "very crank, and sails heavy in a wind." They now had 72 prisoners from their prizes, and Dover was sent to put them ashore on the mainland; they had been well treated during their captivity: "we allow'd Liberty of Conscience to our Prisoners, for they had the Great Cabbin for their Mass, whilst we us'd the Church of *England* Service over them on the Quarter-Deck, so that Papists here were the Low Churchmen."[22]

On 7 August they sailed from Gorgona with the three ships, *Duke, Dutchess,* and *Marquis;* their plan was to make for "the Coast of Mexico" and there await "the Manila Ship bound for

18 Dover, pp. 101-102.
19 W. R., p. 151.
20 W. R., p. 153.
21 W. R., p. 158.
22 W. R., p. 164.

Acapulco," the famous annual treasure galleon; only once before, in 1587, had it been taken by an Englishman, Thomas Cavendish, and the next English success was to be Anson's in 1743.

Oct.10. Dover requested "to remove aboard the *Dutchess.*"[23] It seems that he had some quarrel with Rogers. On 2 November they sighted Cape St. Lucas, the southernmost tip of California, where they had a long and dispiriting wait for the Manila galleon. By 20 December the supply of bread was so low that the Council decided that they would have to make for Guam, in the Ladrone Islands, to recruit, but next morning "to our great and joyful Surprize" a sail was sighted, distant about seven leagues. The weather had now "fallen calm," and the chase was a slow one, but on the morning of 23 December they were within a league of the Spaniard. Rogers "order'd a large Kettle of Chocolate to be made for our Ship's Company (having no spiritous Liquor to give them;) then we went to Prayers, and before we had concluded were disturb'd by the Enemy's firing at us."[24] There was a brisk exchange of small-arms fire, but the Spaniards "did not ply their great Guns half so fast as we," and after a three-hour fight they struck their colours. The Spanish ship was the 400-ton *Nostra Seniora de la Incarnacion de Singano,* mounting 40 guns, with a crew of 193. Rogers was wounded in the action by a bullet that struck him in the left cheek, "carrying away great part of my upper Jaw"; he was unable to speak above a whisper and the swelling his throat made swallowing difficult. One other Englishman was slightly wounded.

Their prize was only the first of two treasure ships; the larger one was to follow, so the *Dutchess* and *Marquis* continued to cruise off Cape St. Lucas awaiting her, while the *Duke,* which had borne the brunt of the encounter, went into a nearby bay to refit. They had not long to wait: "Sunday, December 25. being Christmas Day at eight in the Morning, saw a Sail distant about seven Leagues,"[25] and by midnight the *Dutchess* was alongside her, engaging her in a running fight. Rogers put to sea as soon as he saw the Spaniard, being determined to join in the chase, though "I was in so weak a Condition, and my Head and Throat so much swell'd, that I yet spoke in great Pain."[26] All three ships took part in the fight, but their six-pounders had little effect on the strong sides of the enemy ship, though they fired five hundred or more

23 W. R., p. 197.
24 W. R., p. 214.
25 Cooke, E., *op. cit.,* vol. I, p. 346.
26 W. R., p. 217.

shot into her; by midday on 27 December their ammunition was running low, and their masts and rigging were "much damnified" by the enemy's 12-pounders, so the attack was called off. Poor Rogers was again wounded, "part of my Heel-bone being struck out, which bled very much, and weaken'd me, before it could be dressed and stopt."[27] The loss of this prize was a severe disappointment, "but since Providence or Fate will have it so, we must be content."

The captured Manila ship was renamed the Bachelor Frigate in honour of one of their owners, and Dover was proposed by a majority of the Council as her commander; to this Rogers would not agree, and from his sick-bed wrote: *"'tis not for the Safety of the rich Spanish Prize, that Capt.Dover command her, because his Temper is so violent, that capable Men cannot well act under him, and himself uncapable"*[28] (not being a sailor). Eventually two sailing captains were appointed under Dover, and he "shall not molest, hinder or contradict 'em in their Business"; the three men were given instructions "recommending Peace and Tranquillity among them."

They left the California coast on 10 January 1709/10, making for Guam in the Ladrones, six thousand miles away.

14 February. "In Commemoration of the ancient Custom in *England* of chusing *Valentines,* I drew up a List of the fair Ladies in *Bristol,* that were any ways related to or concern'd in the Ships, and my Officers every one drew, and drank the Lady's Health."[29] At Guam and at the Island of Bouton they took on provisions, and on 20 June "got happily to Anchor in the Road of Batavia, a Noble City," the capital of the Dutch East Indies. "Naturalists differ concerning these Islands of *India,* some affirming they were created with the World, when the Author of Nature separated the Land from the Water; others, that they were made by *Noah's* Flood; and others suppose them to have been cut off from the Continent by Inundations, Tempests, Earthquakes, Eruptions of Fire and other Accidents."[30] The *Marquis* was found to be unfit to sail to Europe, since "she had a single Bottom eat to a Honeycomb by Worms," and she was sold for 575 Dutch dollars, "an extraordinary bargain"; and so with three ships they set sail from Batavia on 12 October 1710.

27 W. R., p. 220.
28 W. R., p. 226.
29 W. R., p. 262.
30 Cooke, E., *op. cit.,* vol. II, p. 37.

Anchor was dropped in Table Bay on 28 December, and they spent more than three months in Cape Town awaiting the annual Dutch homeward-bound convoy, under whose protection Rogers decided to sail. We can imagine Dover admiring that beautiful place, with the newly built Groote Kerk, the solid Dutch fort, and the Company Garden above the town with its vines and fruit-trees and "all Sorts of Roots and Herbs for the Kitchen," divided by clipped hedges and long avenues of oak. He would visit the hospital, where six or seven hundred seamen could be housed; the common disease was scurvy, for which was prescribed a generous diet of "Flesh, Rice, Greens," with profuse sweating by "Scorbutick Powders, and in a Bagnio" of herb infusion.

The combined fleet of sixteen Dutch and nine English ships finally left Cape Town on 6 April, and Rogers anchored at Erith on 14 October 1711, after a voyage of three years and two months. So ended this most successful expedition. Including the ships and barks taken at Guiaquil, they had captured twenty sail; less than £14,000 had been spent on fitting out the ships, and the net profits were at least £170,000. Dover must have received several thousand pounds as his captain's share, besides his dividend as owner; as chief medical officer it is recorded that he was paid £423. Among his treasure were two fine silver candlesticks, which he sold for £114 to John Romsey, Town Clerk of Bristol and also a partner in the expedition; Romsey presented them to Bristol Cathedral in 1712, and they are still used on the altar there. But the most notable result of the voyage was Defoe's *Robinson Crusoe*, which was based on the story of Alexander Selkirk; Defoe probably met Selkirk in Bristol soon after his homecoming, and the first part of the book appeared in 1719.

The Ancient Physician's Legacy to His Country

We know nothing of Dover from his return in 1711 until 1721, when he was practising in London, living in Cecil Street, south of the Strand. In this year he was examined for the Licentiate of the Royal College of Physicians, in whose Annals the following entries appear:

[*fol. 142. Censors' Meeting. 6th.January1720/21.*] Dr Dover to be summoned against next Censors' Day.

[*fol. 152. Censors' Meeting. 17/4/20.*] Dr Dover sent a letter to the President excusing his appearing, he having not yet received his Diploma from Cambridge.

[*fol. 154. 5/5/21.*] Dr Dover appeared with his testimonial of M.B. He was told he could not be examined as a Candidate but might be examined for the Licence, the first examination being in Physiology, which he passed.

[*fol. 160. 2/6/21.*] Dr Dover was examined a second time. This examination was in Pathology, and he was approved.

[*fol. 172. 7/7/21.*] Dr Dover was examined a third time, in Therapeutics. Dr Hulse, the Censor, was absent, and therefore he had to arrange to see him on another occasion.

[*fol. 175. 30/9/21.*] Sir Hans Sloane proposed in Comitia that Dr Dover be admitted as a Licentiate. He was admitted, but, owing to the loss of a key his Diploma could not be sealed till the following Comitia.[31]

Dover continued to practise in London till 1728, when he moved down to Gloucestershire for a few years. In 1731 he was again in London, living in Lombard Street; he saw patients at the Jerusalem Coffee-House in Cowper's Court, Cornhill, a favourite resort of East India merchants, and here his letters were addressed. In 1736 he moved his residence to Arundel Street, another street on the Thames side of the Strand, and there he remained till his retirement to the Cotswolds.

For our knowledge of his professional views we rely chiefly on his book, *The Ancient Physician's Legacy to his Country*. This was widely read in the eighteenth century, and ran to eight editions; it first appeared in 1732 and was translated into French in 1734, the sixth edition was published in 1742, when Dover was eighty, and the last was brought out in 1771. In defiance of the Royal College's rule against discovering "to the People even the Names of any Medicines," Dover addresses his book to the layman, saying that it is "an Account of the Several Diseases incident to mankind; described in so plain a Manner, that any Person may know the Nature of his own Disease. Designed for the use of all Private Families."[32]

Much of the book is devoted to bitter polemics against his fellow physicians and the apothecaries; letters from grateful patients are quoted, and full details of case histories are given as evidence of success, with name and address published in a way that seems strange to a modern reader. As an appendix, Dover prints the *Statutes of Morality* of the Royal College, intending to expose "a Set of Gentlemen, who like Moles work under Ground, lest their Practices should be discover'd to the Populace, by which Means,

31 Annals of the Royal College of Physicians, vol. VIII.

32 Subsidiary title of the *Legacy*. The first edition was printed for the author in 1732, and sold by A. Bellesworth and C. Hitch in Paternoster Row (and two other book-sellers). Price stitched, five shillings.

in all Probability, they would be put to Confusion of Face."[33] The Statutes decree that "No member shall accuse another of Ignorance, or wrong Practice, or of any Villany or ignominious Crime whatsoever, no, not so much as to pass any publick Reflection upon him,"[34] nor shall a doctor take over another's patient without doing "his best to have the former retain'd with him." Dover inveighs against this as a gross deception of the patient, and he himself is free in his criticisms and ready to record success where others failed.

Even Dr. Radcliffe, the King's Physician, does not escape Dover's denigrations; Dover writes of *Anasarca*:

> This Disease is not so common as the Ascites, and is much easier cured. Yet Mr *Towne*, one of the King's Gardiners, died of it under Dr *Radcliff's* Care. A Gentleman carried me to the unfortunate Man; but the Doctor was so confident of saving him by the wonderful Panacea Blisters, that I was not listen'd to. The Blisters, instead of proving Remedies, only gave the Patient Pain, without affording him any Help; so that in a short Time after he died.[35]

In the Annals of the Royal College is recorded a complaint against Dover for such unethical conduct:

> [*fol. 200. 5/1/21/22.*] Dr Wagstaffe complained against Dr Dover "for breach of moral statutes" and he was ordered to attend on the next Censor's Day.
>
> [*fol. 201. 2/2/21/22.*] Dr Wagstaffe's complaint was heard that he being in charge of one Balchin in Tower St., Dr Dover came and "without informing him" took over the case. The patient died. Dr Dover denied knowledge of Dr Wagstaffe, but was admonished.[36]

Dover attacks the Apothecaries for recommending only "a Writing Physician," a man who will prescribe at every visit, and whose "Apothecary's Bill in a Fever" may amount to £40 or £50, where Sydenham would have used less than forty shillings worth. Every doctor must curry favour with them, "for whose Reputation can long stand the Shock of an universal Charge rung on their melodious Mortars?" No wonder they called him the "Empyric, Quack, and Nostrum-Monger." "I know very well, I am no sooner called to a Patient, but it is reported immediately, He is dead, and I have killed him."[37] Dover was called once to a man "seized with a violent Fever: whose Eyes were set in his Head, his Jaws fallen, his Tongue directly black and hard, his face as black as an Indian

33 Dover, p. 241.
34 Dover, p. 231.
35 Dover, pp. 23-24.
36 Annals of the Royal College of Physicians, vol. VIII.
37 Dover, p. 143.

with round Drops upon it as big as Pease." After a 50-ounce venesection and many pints of cold drink, the patient made a dramatic recovery, whereupon "some People have maliciously reported, That *John-Dineley Goodere, Esq;* instead of the most violent Fever that I ever saw, labour'd only under a Fit of Drunkenness."[38]

The *Legacy* opens with a good account of Gout, for which Dover prescribes a purge, the application of a raw beefsteak, and "a very pleasant, easy sudorific," the famous Dover's Powder:

> Take Opium one Ounce, Salt-Petre and Tartar vitriolated, each four Ounces, Ipocacuana one Ounce, Liquorish one Ounce. Put the Salt-Petre and Tartar into a red-hot Mortar, stirring them with a Spoon till they have done flaming. Then powder them very fine; after that slice in your Opium; grind these to a Powder, and then mix the other Powders with these. Dose from forty to sixty or seventy Grains in a Glass of White-Wine Posset, going to Bed.—Covering up warm, and drinking a Quart or three pints of the Posset-Drink while sweating. In two or three Hours, at farthest, the Patient will be perfectly free of Pain.[39]

The proportions of opium and ipecacuanha are essentially the same in the modern formula:

Prepared ipecacuanha	10%
Powdered opium	10%
Lactose	80%

Dover expounds at great length the virtues of metallic mercury which he took himself for years and which he claims as a cure for asthma, worms, colic, sterility, gout, and several other diseases; his usual dose was one ounce a day, but for intestinal obstruction he gave a pound or more, "Its Weight making a free Passage through the Body." This treatment provoked angry opposition from "the Gentlemen of the Faculty," and a spate of pamphlets deriding him as "The Quick-silver Doctor." Dover, in reply, printed many letters of thanks from patients cured by mercury; besides, there was theoretical justification for its use:

> He that rightly considers the State of the Animal Oeconomy, the various Alterations it suffers from the Stagnation of its more viscid Juices in the smallest Canals, and how much the Impulse and Force of the circling Blood, by which Obstructions are to be removed, must be increased by carrying along with it such Particles as the Mercurial Globuli, will perhaps see good Reason to allow, that the prudent and cautious Management of Quick-silver, may do that in some obstinate and dangerous Diseases, which we cannot promise ourselves from any other of our known Medicines whatsoever.[40]

[38] Dover, pp. 144-147.
[39] Dover, p. 14.
[40] Dover, p. 83.

Consumption is caused by "an inflamed Mass of Blood; the inflamed Part is strained" off in the lungs, and coughed up. If it is not removed:

> It inflames the Lungs, till at last they are impostumated; and then the Patient's Case is desperate. The good Dr *Sydenham* wonderfully commends Riding in this Distemper. But, with deference to my old Friend's Judgement, I have known frequent Bleedings in small Quantities, do more good. As this is an inflammatory Disease, all Methods of Cure ought to be avoided, except such as abate the Inflammation; which I may venture to say, is usually increased by the vast Quantities of Oils and Syrups prescribed: And this is the chief Reason that Physicians have had so little success in Consumptions. They allow the Patient to use a strengthening Diet, and indulge him too much with Wines, Gravies and the Like; whatever keeps the Lungs cool, it is the only way to cure Consumptions.[41]

It is not surprising that the *Legacy* "made a great Noise in London, and was the Subject of every Coffee-House," and perhaps Dover expected it:

> I do not seek for Applause for this Performance, especially from the Gentlemen of the Faculty, being sensible how many great and powerful Enemies I have amongst them: Who, as they have done all they could hitherto to discredit my Practice, so probably will take Occasion, from the Publication of these Sheets, to improve their Invectives and Resentments against me: but as Custom has made ill Usage familiar to me, I think I am prepared for any future Calumny. In the mean time, I would caution unwary People, Not to take every Graduate for a Physician, nor a Clan of prejudiced Gentlemen for Oracles.[42]

For his last years Dover retired to the village of Stanway, twelve miles northeast of Cheltenham, living there with his friend and distant relative, Robert Tracy, to whom the *Legacy* is dedicated. Stanway House (Fig. 4), the Tracy family home, is a fine mansion built of the yellow Cotswold limestone, with an ornate gatehouse attributed to Inigo Jones. Here Dover died and on 20 April 1742 was buried, at his own request, in the Tracy vault under the altar; in later structural alterations, the altar was lowered and no memorials to Dover or to the Tracys remain.

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Ancient Alchemy and Abstract Art

GEORGE SARTON*

"Voici les livres de science, ou plutôt d'ignorance occulte"
Montesquieu: *Lettres persanes,* 1721.
(lettre cxxxv).

I do not apologize for speaking of chemistry and art to this audience,[1] for every physician must have some fundamental knowledge of chemistry, while many of them have a genuine interest in art. Chemistry is an essential part of his technical equipment, while some familiarity with art is a part of his humanity.

I. Alchemy

IN order to understand *The Sceptical Chymist* (1661), one must be aware of the evolution of chemistry down to that time and even of its evolution afterward. Chemistry is almost as ancient as civilization, because early men were very soon obliged to solve chemical problems; of course, they did not call them chemical, but they were facing such problems and solving them as well as they could. To quote a single instance, by the middle of the second millennium, if not before, Egyptian craftsmen were already digging native alum, purifying it, and using it as a dyer's mordant. The principles of chemistry were so deeply hidden, however, that it took mankind almost four thousand years to discover them. During that long period, the needs of life drove them to experiment with a great many substances and by so doing they could not help but discover many chemical properties. During the early Middle Ages, much chemical knowledge and technique were accumulated by Arabic alchemists, and the results were eventually translated from Arabic into Latin. By the beginning of the fourteenth century, those traditions were discussed by philosophers and the experiments continued by craftsmen.[2] Indeed, by that time so many astounding things had already been accomplished by chemists, consciously or unconsciously, that the wildest hopes seemed permissible. Think of the many problems solved by metal-

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[1] Fragment of a lecture on Robert Boyle delivered to the American Association of the History of Medicine at the Hotel Somerset, Boston, on 22 May 1950. My views on Boyle were published under the title "Boyle and Bayle. The sceptical chemist and the sceptical historian" (*Chymia, Phila.*, 1950, *3*, 155-90, 11 ill.). My Boston lecture was not written at that time; this article expands some of my remarks which expressed the essential.

[2] For a first guide to mediaeval chemistry, see my *Introduction to the history of science* (1947, vol. 3, pp. 165-81, 1129-40).

lurgists, painters and dyers, glass makers, manufacturers of paper. A good many substances had been discovered, the most important of them being alcohol. It was not necessary to be a chemist or chemically minded in order to appreciate the physiological properties of *aqua vitae,* but chemists discovered in addition that alcohol made it possible to dissolve many substances, such as fats and resins, which are insoluble in water. This improved their experimental technique considerably. They were now able to distill all kinds of solutions and to extract their essential oils. Material achievements encouraged the wildest alchemical hopes. Considering the extraordinary reactions and transformations which had already been effected, would it not be possible to transform base metals into noble ones, such as gold and silver?

Those hopes might seem extravagant, but they were not foolish; the great majority of chemists, however, were too busy in trying to solve the technical problems of arts and crafts to pay much attention to metachemical issues.

The history of early chemistry down to Boyle or to Lavoisier might be divided into four broad streams, the first two of which might be called chemical and the other two alchemical. The first chemical stream concerned the technical efforts to which we have already referred. The practical chemists had developed in the course of time an elaborate technique which enabled them to conduct various operations (solutions, sublimations, evaporations, distillations with reflux condensers, crystallizations, etc.), and they had invented a large number of recipes which were available to all kinds of craftsmen, such as prospectors, apothecaries, pyrotechnicians, makers of dyes, colors and varnishes, of gun powder, of glass and glazes, etc. Our knowledge of their efforts is very incomplete, because those practical chemists were often illiterate or did not wish to reveal their discoveries, preferring to keep them for themselves and their families.

The second chemical stream was theoretical or combined practice with theory. Some of the chemists were not satisfied with the finding of good recipes; they wanted to understand what they were doing. It is clear that even the humblest of them must have craved for some understanding which would enable them to solve other problems more easily. Theory and practice always hang together, but the proportions of each in individual cases vary exceedingly; the whole gamut of zero to one hundred for theory and of one hundred to zero for practice. The second stream concerns the men whose main interest was in theory, the inventors not of recipes but

of systems, the authors of textbooks. The history of theoretical chemistry might be said to begin with the early physiologists and atomists and with book IV of the *Meteorologica* ascribed to Aristotle. It would show how the Greek philosophers postulated the theory of four (or five) elements, then the atomic theory, and how the followers of Aristotle rejected the idea of vacuum and postulated a kind of material continuity. During the Renaissance, the four elements were replaced by their "three hypostatical principles," mercury, sulphur, and salt. In Boyle's time, there was no way of knowing with certainty whether the world was made of the four elements, the three principles, or the atoms. This last hypothesis seemed to be the most plausible, but it remained highly conjectural until the beginning and disputable until the end of the nineteenth century.

During the Middle Ages, a large number of chemical treatises were composed first in Arabic, later in Latin. The best of them included the description of chemical operations and reactions and they became gradually more scientific. To make a long jump, let us now mention the *Alchemia* of Andreas Libavius, published in Frankfurt in 1597, which has sometimes been called "the first chemical textbook in the modern sense." Such a statement is highly controversial, but we may accept it as a convenient simplification. The point of interest is that that first treatise of chemistry was called "alchemy." Indeed, the two words "chemistry" and "alchemy" were confused for centuries; their fields of meaning overlapped in different ways according to various definitions of them.[3] I prefer to use the second term when the field is not restricted to chemical subjects but is extended to philosophical ones, or to what we might call "metachemical." The same confusion existed between the words "astrology" and "astronomy" which were used promiscuously for centuries; it was only in modern times that it was generally agreed to reserve the first term for superstition, the second for the exact science.[4]

[3] It is particularly futile to discuss these matters on the basis of the etymologies of both words. The original meaning of the word, chemia, chymeia, chemistry, etc., is not known with certainty; the origin may be Greek or Egyptian. In any case, the origin of the words chemistry and alchemy is the same, except that the Arabic article has been added to the second. This is an interesting witness of the Arabic influence, but little else. To discuss the respective validities of the terms, chemistry and alchemy, is like discussing the validities of "chemistry" and "the chemistry." Such discussions lead nowhere. Words are witnesses, but very capricious ones.

[4] The word astrology is as respectable as astronomy. Compare geology and biology. Here again, etymology would lead us astray; *logos* is as good as *nomos*. The meaning of a scientific term is determined exclusively by its definition; the definition may vary in the course of time. For the promiscuous use of astrology and astronomy see my *Introd.* (1931, vol. 2, p. 760, passim).

Libavius' *Alchemia* (1597) was the first of a long series of treatises, such as the *Traicté de la chymie* of Nicolas Le Fèvre (Paris 1660, 2 vols.) who was teaching at the Jardin du Roi, the *Traité de la chymie* of his successor, Christoph Glaser (Paris 1663), the *Cours de chymie* of Nicolas Lémery (Paris 1675) . . . the *Elementa chemiae* of Hermann Boerhaave (Leiden 1732, 2 vols.) . . . the *Traité élémentaire de chimie* of Lavoisier (Paris 1789, 2 vols.), etc.

The combination of practice and theory, or rather their separation, was well illustrated by the teaching of chemistry in the Jardin du Roi (now Jardin des Plantes) in Paris, as set forth in the textbooks of Le Fèvre and Glaser. The chemical teaching was done by a professor and a demonstrator; the first explained the principles and did not stoop to manipulations; when he had finished his lecture, the demonstrator conducted a few experiments. Nevertheless, these professors were not indulging in gratuitous speculations. Glaser wrote in the preface of his *Traité*: "I profess to speak of nothing but what I know and to write about nothing but what I have done myself."[5] It does not follow that those treatises did not include irrational or speculative entities. For example, Le Fèvre accepted the reality of the "universal spirit" of the alchemists, and a century later, when Lavoisier had discarded phlogiston, he still preserved light and caloric. Aether remained with us much longer and, after having been driven out, the ghost of it has recently been reintroduced by Dirac. The development of scientific abstractions is very gradual and precarious.

While many of the chemists were performing their experiments and elaborating explanations of increasing generality, some of their colleagues were so astonished by the marvellous results already obtained that they could not moderate their hopes and restrain their ambition. Inasmuch as chemical reactions transformed so deeply the appearance and substance (?) of bodies, would it not be possible to change base metals into noble ones and to make artificial gold? We cannot say exactly when these ideas originated, and their development throughout late antiquity and the Middle Ages was very complex. It is more interesting in this context to remark that the alchemical hope continued to flourish until very late. Boyle was still nourishing it and so were

[5] Ferdinand Hoefer: *Histoire de la chimie* (2d. ed., Paris 1869, vol. 2, pp. 277, 283). In my study of Boyle, I did not speak of his French predecessors. When he published the *Sceptical chymist* (Oxford, 1661), he was certainly well acquainted with their works. The matter deserves investigation. Our knowledge of seventeenth century chemistry is still very imperfect.

Locke and Newton.[6] As late as 1782, James Price, F.R.S., claimed that he had discovered a means of extracting gold from mercury, but he failed to repeat the experiments before the Royal Society in the following year and committed suicide.[7]

The difference between practical chemists and practical alchemists was one of purpose, not of method.[8] They all used the same instruments and conducted as well as they could the same kinds of operations, but the practical alchemists were fascinated by gold, while the practical chemists tried more humbly to solve current problems of the arts and to produce useful commodities. It is very instructive to consider the matter in retrospect. The alchemists did not succeed in making artificial gold, but if they had succeeded, their success would have been changed ultimately into disaster, for if it had been possible to produce gold cheaply, it would have lost its value. On the other hand, practical chemists have produced an infinity of useful goods, created fabulous wealth, and there is no end in sight.

The fourth stream is that of mystical alchemy, which is represented by early writings in Chinese, Arabic, and other languages. It received a strong fillip in the fourteenth century from the writings ascribed to Ramon Lull (XIII-2), and those writings gave birth to many others during the Renaissance. As the dreams of the practical alchemists were continually disappointed, those enthusiasts took refuge in mysticism. In the seventeenth century, while science was growing by leaps and bounds, the alchemists were making no progress at all. Instead of admitting their failure, they increased their scope and alchemy became the "hermetic philosophy." The quest for the philosopher's stone or the elixir of life continued but was combined with an increasing number of other things. The alchemists had failed to produce gold; they now proclaimed that their interest was not centered in gold but in other goods of immeasurably greater value, such as health and longevity, happiness and virtue.

The great majority of alchemists or spagyrists of Boyle's time were occultists of all colors and degrees, whose boastfulness was generally in inverse proportion to their technical qualifications. Their books were written in a

[6] H. R. Fox Bourne: *Life of John Locke* (New York, 1876, 2 vols.) vol. 2, pp. 223-25.

[7] H. Charles Cameron: The last of the alchemists (*Notes and Records of the Royal Society*, 1951, *9*, 109-14; *Isis*, 1953, *44*, 131).

[8] The same remark would apply to astrology. The more honest astrologers used the same tools as the astronomers but used them for other purposes. As they were far more numerous than the astronomers and needed tables just as much as the latter did, it is because of them that so many astronomical tables were published in MS or by the early printers.

language deliberately obscure and misleading, either (as they put it) to prevent the truth from reaching unworthy minds or, more probably, to conceal their own ignorance; their descriptions and explanations were confused because of the utter confusion of their own thoughts; they were meaningless, or at least, no meaning could be extracted from them; they included no truth, or whatever truth they might occasionally include was hopelessly mixed with falseness.

Unfortunately such writings, however obscure, always find a public among the silly people who mistake obscurity for depth and who wish to exhibit the profundity of their own vacuous minds. The alchemists won the admiration and the allegiance of uncritical readers who were anxious to show that they "understood" the alchemical nonsense and were on the same intellectual level as their instructors. This is a social phenomenon of great generality which can be observed in our own days and explains the success which charlatans have always obtained and will never cease to obtain.[9]

The hermetists were generally learned people, or rather overlearned, and chock-full of superstitions. They enriched alchemical literature with ideas pilfered from almost anywhere. For example, their knowledge of dogmatic theology enabled them to compare the three hypostatical principles with the Holy Trinity, the philosopher's stone with Christ the Saviour, and the transmutation of metals with the Eucharist or with the Resurrection. Such comparisons were more impressive than instructive. Those "philosophers" or charlatans (call them as you please) tried to clear up the alchemical mystery by referring to other mysteries, and the piling up of mysteries increased the darkness and confusion but also the wonderment of uncritical readers. They used the language of biology, of religion and philosophy, alluded to the immortality of the soul, revived hylozoism and the old comparisons between the microcosmos and the macrocosmos, found arguments in the cabbala, astrology,[10] white and black magic, divination, sexology, Rosicrucianism, etc. The flotsam, jetsam, and lagan of centuries may be found in the alchemical books of the seventeenth century; after a while such immense learning became easy enough because the hermetists pillaged their predecessors; the newest olla-podrida was very often but a rehash of the older ones.

It must be admitted, however, that men of sufficient imagination could always discover novelties. The field of symbolic alchemy was truly endless; as the alchemical processes could be compared with any change occurring in the material or spiritual world, in the world of dreams as well as that of reality, there was no limit

[9] Quoted, minus footnote, from my paper on Boyle and Bayle (*Chymia*, 1950, *3*, 162).

[10] The transition to astrology was easy, for were not the seven metals comparable to the seven planets? The other transitions were of the same quality.

to alchemical fancy except the poverty of a man's imagery and his lack of boldness.

The four streams which I have briefly described were not exclusive but came in and ran together in many places. No early chemist rejected alchemy, though he might neglect it, and if he were humble as well as honest, he might decide that he was not equal to it. Even so, there are humble men of science among us who abandon metaphysics to philosophers, because they fear that their mind is not good enough for that. On the other hand the alchemists, even the most esoteric of them, might perform genuine chemical experiments, and perform them well. Men like the Belgian, Jean Baptiste Van Helmont (1577-1644), the Englishman, Robert Fludd (1574-1637), the German, Johann Rudolf Glauber (1604-1670), were very complex personalities reflecting all the tendencies of their age. It is not enough to say of them that they were chemists or alchemists. When one studies the intellectual development of the seventeenth century, one meets many of their kind in almost every direction.

The main difference, however, is that the earthbound chemists kept their promises, while the alchemists did not and could not. It does not follow that the latter were fools or knaves; many of them were charlatans, not only because of their own weaknesses but also because of the superstitious desires and the greed of their employers. At any rate, whatever their motives were, generous or not, they failed repeatedly, while their humbler brothers made possible by and by the development of chemical theory and the miracles of the chemical industry.

The aberrations of symbolic alchemy were at their climax in the seventeenth century and the beginning of the eighteenth, but they continued until much later. Two remarkable specimens of a relatively late time (the middle of last century) are the *Suggestive inquiry into the hermetic mystery* by Mary Anne South (Mrs. Atwood) published in London in 1850[11] and the *Remarks upon alchymists* by General Hitchcock, in Boston in 1857.[12] These were not the last writings of their kind; more have appeared since or will appear in the future. There is no reason why "hermetic philosophy" should ever stop; it will never be better or worse than it

[11] Denis I. Duveen: *Bibliotheca alchemica et chemica* (London, Weil, 1949), p. 32. F. Sherwood Taylor: *The alchemists* (New York, Schuman, 1949), p. 228.

[12] E. A. Hitchcock (1798-1870) wrote other books of a similar kind. I. Bernard Cohen: Ethan Allen Hitchcock, soldier, humanitarian, scholar. Discoverer of the true subject of the hermetic art (*Proceedings of the American Antiquarian Society*, Worcester, Mass. 1952, *61*, 29-136; *Isis*, 1952, *43*, 374; *44*, 139).

was; the old metachemical fancies will be repeated verbatim or slightly modified in the course of time.

The alchemical writings were of necessity obscure, and, as we remarked above, the obscurity was partly deliberate. Not only were a large number of technical words used, but these terms were often replaced by symbols;[13] in many instances, the terms and symbols were taken for granted. The very thoughts were obscure to begin with and were made more obscure by various implications. The alchemists outbade one another in that game, and the readers, far from complaining, encouraged them to deepen the mystery.

One of the clearest signs of increasing rationalism and of the progress of chemistry or of science in general is the very fact that obscurity is no longer admired or encouraged, but discredited. The modern man of science does not mistake obscurity for depth or importance, and if he is aware of deliberate or unnecessary obscurity, he does not praise the writer but blames him and distrusts him. It is the scientist's duty, he would say, to express his thoughts as clearly as possible. If the account is foggy, he does not conclude that the subject is too deep or the author too wise but rather that the latter does not yet know the subject well enough or is trying to bluff. It is the everlasting punishment of people who indulge in esotery and hide the concatenation of their ideas instead of doing all they can to elucidate them, that the purity of their intentions falls under suspicion. Why should one believe a man who speaks in riddles? Why should one trust him?

A very typical example of this attitude was given a few years ago when the distinguished physiologist, Lawrence Joseph Henderson (1878-1942), published his Silliman Lectures entitled *Blood, a study in general physiology* (Yale University Press, 1928). This was a work of great value, but the author was tempted to increase its importance by adding cryptic remarks which irritated some readers and caused an unpleasant reaction. A brother physiologist, Yandell Henderson, wrote a challenging article entitled "Is this science or metaphysics?" (*Science,* 1929, *69,* 39-41). L. J. Henderson was very angry and thought that he was badly used, but he

[13] The esoteric language of the alchemists is still and will ever be a stumbling block for modern historians who wish to understand exactly what they are reading, but the symbols and secret names have been explained in various books. Fritz Lüdy, jr., *Alchemistiche und chemische Zeichen* (58 p., 30 ill., 128 pl., Gesellschaft für Geschichte der Pharmazie, 1928; *Isis,* 1929, *13,* 232). Carlo Oreste Zuretti: *Alchemistica signa* (Bruxelles, 1932, 92 pp., 17 pl.; *Isis,* 1933, *19,* 440). William Jerome Wilson: Catalogue of alchemical MSS in the United States (*Osiris,* 1939, *6,* 836 pp.; *Isis,* 1940, *32,* 385). Alfred Siggel: *Decknamen in der arabischen alchemistischen Literatur* (Berlin, 1951, 55 pp.; *Isis,* 1952, *43,* 184).

had been the offender. Scientific profundity is not expressed in sibylline language but in the clearest possible way, preferably the mathematical.

Some scientific topics are, of course, very difficult to explain or even cannot be explained at all except to people who are sufficiently well trained and have a general knowledge of the subject and its terminology. The explanation will be obscure to the ignorant; that is well understood. One could not explain a game of baseball to somebody who did not know the rules and the lingo. A Chinese text, however simple, is absolutely dark for any one who does not know the Chinese language. Such obscurity is unavoidable but is not in question at present. We do not object, nor does anybody object, to the obscurity caused by insufficient preparation of the readers, but only to the artificial obscurity due to the snobbishness and perversity of the writers.

II. Art

There is no longer any such ambiguity or obscurantism in the scientific field. A man of science is expected to set forth his ideas as clearly as possible; any advectitious or adventitious obscurity will be charged against him. The methods of science are so well established that the alchemical delusion will never occur again. Of course, alchemical books will appear from time to time, as well as astrological or magical ones, but they will be definitely outside the scientific field. Nobody, except men as foolish as the authors, will ever bother to refute them. In the field of art, the situation is not so good; modern art seems to be thriving in an atmosphere of confusion, bluff, and ambiguity.

In the case of alchemy, we found it useful to outline very briefly the whole development which led to the insanity of the seventeenth century. The same procedure would not help us in the case of art, because art is not progressive in the way that science is. The development of art is not helicoidal and upward, like that of science; it is rather an erratic succession of ups and downs. An Egyptian artist of four millennia ago may be far superior to one of today, superior in every respect. The "hermetic philosophy" was not progressive; it was not capable of progress because it was not a science, but a pseudo-science; it was a form of embezzlement.

As to art itself, let us approach it in a different way. The whole artistic field may be divided into two territories, which are not completely exclusive, yet sufficiently so for most purposes—the fine

arts concerned with the creation of beautiful objects for their own sake, and the decorative arts which are ancillary to other realizations. Those decorative arts are subordinated to architecture, the making of textiles or pottery, costuming, tattooing, etc. They are either naturalistic in the sense that the decoration is derived from nature; or else symbolic,[14] geometric, abstract.

The two streams, naturalistic and abstract, can be discerned in the decorative arts from prehistoric days to our own. That division is neither so obvious nor so continuous in the fine arts, for a simple reason. The decorator has no purpose but to embellish something else, which has a function of its own. On the contrary, the architect, painter, or sculptor is trying to create something new and complete in itself; something that must explain itself and stand on its own feet. Until our century, it was generally believed that the artist has a definite message to deliver, and that a message must be reasonably clear or else ceases to be a message.

Modern art is as old as the hills.[15] A book was recently published called *40000 Years of Modern Art*. That title was well chosen and not untrue. Inasmuch as some of our contemporaries were deeply influenced by prehistoric or primitive artists and imitated them more or less consciously, the terms primitive and modern became to that extent interchangeable.[16]

We must restrict ourselves, however, to our own age which was the first to carry these tendencies to the limit. The *Salon des Indépendants* held in Paris in 1884 is sometimes considered as the beginning of the modern reaction against academism and romanticism, but the great masters of that first period did not break the old traditions as far as essentials are concerned; they were, on the whole, so conservative that they now enjoy the prestige of "classics"; I am referring to Van Gogh (1890), Seurat (1891), Toulouse-Lautrec (1901), Gauguin (1903), Cézanne (1906), Renoir (1919).[17] One is astonished to find that a painter as "vieux

[14] There are many steps between naturalism and symbolism, because the decorative pattern is never a direct and complete copy of the natural object, but is incomplete and selective; it may be derived from the object in various degrees of abstraction. Compare a Corinthian or Byzantine capital with the leaves of acanthus.

[15] For the sake of simplification, the following remarks apply chiefly to painting.

[16] Gauguin first went to Tahiti in 1891. At the turn of the century, Matisse, Vlaminck, Derain were collecting African sculpture. Other forms of primitive art (Melanesian, Australian, American) were eagerly studied and imitated. African influences can be detected in many modern paintings, e.g., in Picasso's "Les demoiselles d'Avignon" (1906-07).

[17] The dates are the death dates. Note that they were all gone before the First World War, except Renoir, who was 78 at the time of his death. Renoir was born in 1841, that is, before all the others, except Cézanne (b. 1839). To those great forerunners, I might have added the Fleming James Ensor (1860-1949), but he lived so long that he outlived the revolution he had helped to create.

jeu" as Gustave Moreau (1826-98) was the teacher of Matisse and of Rouault, who became the leading fomenters of rebellion. The revolution began with our century and was going strong before the end of the first decade. The first period of Cubism lasted from 1908 to 1912, then followed various deviations, for it is the fate of any revolution to change rapidly and frequently and break itself into new insurrections, newer sects, and smaller sets.

Cubism caused a reaction against itself, Synthetic Cubism, and was followed in quick succession by Futurism, Purism, Orphism, Synchronism, Vorticism, Suprematism, Rayonism, Non-objectivism, Neo-Plasticism, Constructivism,[18] Compressionism, Machinism, Dadaism. Fauvism and Cubism had completed their task before 1910; the main innovations had been made before 1920; all the avenues of abstractionism had been explored before 1940.

Said Marcel Duchamp:[19]

> Dada was an extreme protest against the physical side of painting. It was a metaphysical attitude. It was intimately and consciously involved with 'literature.' It was a sort of nihilism to which I am still very sympathetic. It was a way to get out of a state of mind—to avoid being influenced by one's environment, or the immediate past: to get away from clichés—to get free. . . . Dada was very serviceable as a purgative.

These remarks reveal some of the physical causes of the revolt. Escapism, primitivism with a vengéance, false and strident. Infantilism. Said the Rumanian sculptor, Constantin Brancusi (b. 1876), "When we are no longer children we are dead."[20] Primitivism has many charms of its own when it is genuine,[21] artificial primitivism is unconvincing and as disturbing as any other lie.

All the transmogrifications of Cubism, Dadaism, Surrealism had been attempted before the Second World War. Every style of art is brought to a climax by a few masters, continued more or less brilliantly by epigoni. Finally, the innovations degenerate into formulas; and when that happens, that style had reached its last stage, empty formalism, academism. One cannot help feeling that abstractionism in all its forms has reached that stage. We are now living in an age of academic abstractionism.

[18] Modified a little later by the Russian, Nahum Gabo (b. 1890), under the name "Constructive Realism."

[19] Marcel Duchamp (b. 1887) as quoted by James Johnson Sweeney in *Three lectures on modern art* (New York, Philosophical Library, 1949), p. 45.

[20] Quoted by Christian Zervos: *Histoire de l'art contemporain* (Paris, Cahiers d'Art, 1938, 450 pp., 4°), p. 323.

[21] Consider the remarkable work being done now in Haiti. Selden Rodman: *Renaissance in Haiti* (New York, Pelligrini and Cudahy, 1948). For example, Castera Bazile: "Adoration of the Virgin II" (facing p. 19), a very beautiful painting.

It has often been claimed that the revolt of our time against all the previous styles, except the most primitive, was caused or clinched by the phenomenal progress of the photographic arts. What is the point of trying to represent nature, if the camera can do it much better? It is clear that photography discouraged naturalism, yet the good naturalistic paintings were never photographic; however, faithful to nature, there was always in them some "je ne sais quoi" which no camera could ever have recorded.

The abstractionists did not revolt against the representations of reality, but against reality itself.

Another fallacy is to say that artistic nihilism was encouraged by the progress of science.[22] It is certain that the scientific discoveries made since 1895 have been of such a revolutionary nature, that the complacency of older men of science was rudely shaken. The full impact of radioactivity, however, was not felt by the public until a generation later; the same is true of psychoanalysis or of the theories of relativity and quanta. The non-scientific public (including the artists) was hardly influenced by the scientific revolution until after the First World War, but by that time the artistic revolution was already completed and the new art was in full swing.

Here are a few landmarks, Stéphane Mallarmé died in 1898. Pablo Picasso painted "Les demoiselles d'Avignon" in 1906-07. Stravinsky's *Le Sacre du Printemps* was first played in the spring of 1913. A great many of the masterpieces of modern art were already in existence before the First World War.

It is perhaps more correct to say that modern art is but one aspect of the profound spiritual malaise of our time. There was more evil in the past than at present, but it was taken for granted and to revolt against it seemed hopeless. By the beginning of this century, the Western peoples had lost their resignation and realized that if they but wanted to with a strong will, they could alleviate or remove altogether many of their miseries. Considering our religious bankruptcy, the political and economic chaos obtaining in many countries, the social and ethical confusion, the unworthiness of a great many men of wealth or power, is it very astonishing that the art created in such surroundings was anarchical and chaotic?

22 This was done by Felix Marti Ibañez: The psychological impact of atomic science on modern art (*Journal of clinical and experimental psychopathology*, 1952, *13*, 40-67; *Isis*, 1953 *44*, 189).

Abstract art is a reflection of social chaos. Note that the chaos existed already before the First World War, but it was naturally aggravated by it. Dada was a child of that war. The many-faced chaos and revolt were exacerbated by the Second World War and by the post-war fevers.[23]

We need peace and unity, and so do the artists; but there was no peace left for anybody, and unity had been broken into innumerable pieces. The artists revolted. Art is one of the blessings of life and it may help to increase our equanimity and happiness, but the artists were so profoundly disillusioned, infuriated, and bedevilled that their own creations became disorderly, aggressive, and savage. We ought to remember that men whose thinking has been violently disturbed, whose hopes have been shattered, whose dreams have become nightmares, try to get rid of them. One way out (for the painter) is to paint nightmares; that is a real catharsis. Unfortunately it does not help other people but scatters the disease.

Instead of being a blessing, art has thus become in many cases an additional curse. The chaos has not been alleviated but increased; peace and unity are less attainable than ever. Visions of paradise have been replaced by visions of hell.

Art is a language, a universal language, or at least it ought to be. It is a means of communication between men, not only between their intelligences, but also between their feelings, and that matters much more. Art brings hearts together. We would expect the artists to increase the solidarity between men and their brotherhood. Those of the past have fulfilled our expectations; that is, perhaps, the main source of our gratitude to them. Modern artists, however, will have nothing of that; they do not wish to communicate but rather to play havoc with the communicators. They create puzzles and speak in riddles. If they be misunderstood, whose fault is it?

Nevertheless, I recognize that artists must be free to do what they themselves consider to be the best. It is for them to know, not for us to tell. We must not resemble those idiots who will say, "I do not know anything about art but I know what I like" and then proceed to deliver their fatuous verdict.

My credentials are better, though I am more keenly aware of their shortcomings than of their merit. During the last thirty

[23] This is expressed somewhat brutally by Curzio Malaparte in his novel *La Pelle* (Rome 1949, p. 143): "No ho conosciuti miglaia come te, dopo l'altra guerra, che credevano d'essere dadaisti e surrealisti e non erano che puttane."

years, I have taken considerable pains to understand modern art, visiting exhibitions in many countries, reading books and articles, subscribing to special reviews, etc. When I failed to understand, I blamed myself more readily than the artists. After all, if an honest artist is really pleased with his work, we should be patient with him, humbly and gently.

In his excellent lecture delivered at Yale, on 19 March 1948[24] Nahum Gabo quoted the following saying:

> You are asking from me my personality—here I am—this is how I see the world—I, not you. You cannot judge my work, because you are not I. I paint what I see and how I see it. I paint what pleases me and you have to take it or to leave it.

This is unanswerable but dangerous—as Gabo himself stated it, "I see nothing but confusion and social and mental disaster on this road."

"Leave me alone," says the insurgent. All right; it is his own decision and his own risk. I can accept his attitude and, even better, Gabo's, which is less truculent. I strongly object, however, to the modern artists who try to fuddle us and to bluff us with references to all kinds of irrelevant subjects. This brings us back to the alchemists. It became the latter's fashion to write in an esoteric language and to make their obscure thoughts more obscure by references to other mysteries. "Don't you understand the Elixir? Perhaps, you will understand it better, if we elucidate it by means of the Eucharist or the Holy Trinity?"

Some modern artists or critics played the same game and with the same success. The less some uncritical readers understood, the more were they impressed; the darker the context, the greater their illumination. It is the old story of the Emperor's Clothes. If I remember rightly, he had no clothes, but none of the courtiers would admit his ignorance, and they all saw the clothes which did not exist. The readers of some of the papers on modern art emulated their ancestors who had read hermetic philosophy in the same spirit; they outbade one another in the recognition of wisdom in the dark writings, because they were anxious to vindicate their own wisdom and their expertness.

Some artists would disclaim interest in physical painting; their interest, they would say, is not physical but metaphysical. That is fine. The Greek painter, Giorgio de Chirico (b. 1888), created in

[24] On constructive realism. It is the best of the *Three lectures on modern art* (New York, Philosophical Library, 1949), p. 63-87.

1917 two masterpieces entitled, respectively, "Petit intérieur métaphysique" and "Grand intérieur métaphysique." Others explained their efforts with references to Einstein, to Freud, to theosophy, to existentialism, and what not. They were worse than the alchemists for the learning of the latter was more genuine. When an abstractionist refers to Einstein, his bluff is extreme, for he tries to enlighten his neighbors with ideas which are absolutely dark to himself.

Even as alchemy was gradually mixed up with all kinds of metachemical ideas, so many defenders of modern art try to bolster it up with meta-artistic considerations, derived from politics, economics, bolshevism, atheism, occultism.[25] The situation is the same in both cases; indefensible ideas are mixed up with a mass of other ideas; obscure things are explained by means of others which are more obscure; the public is offered an olla-podrida which it dares not reject nor even vomit. Many people are too snobbish and too insecure to say no.

The artist's freedom should not be abbreviated, but a man should not pose as an artist when he is something else. He is free to be what he is, but not what he is not. He should be honest and not try to bluff us with a welter of irrelevant arguments and false pleadings.

Works of art must explain themselves and justify their existence. A minimum of commentary is sometimes useful; the painter may help us, for example, to understand the mood of his efforts, even as the musician does; but, in the last analysis, the achievement is the thing. If it be incomprehensible, no commentary, however learned and high-brow, will save it. If it fails to convince, no amount of literary or metaphysical discourse will fill the gap.

Not only should the artistic achievement stand on its own feet without recourse to other achievements, but every art should be, to a large extent, independent of the other arts. When the musician tries to paint or the painter to sing, the result is confusion. It is interesting to note that the artistic revolution occurred in all the arts; this confirms our general explanation of it as a reflex and image of the religious, social, and moral chaos of our time. Nevertheless, the revolution did not break out at the same time in various arts, and this illustrates their relative independence.

25 Occultism provides a common ground to alchemists and abstractionists. It is a treasure of nonsense available to every irrational endeavor.

The musical revolt was definitely later in shaping itself than the painting one. It is true that jazz began rather early; its "prehistory" in New Orleans dates back to the early years of this century, but its fuller development and recognition occurred only in the twenties. The golden years of Louis Armstrong were the years 1926-36, and it was only from that time on (if not later) that jazz influenced outside composers such as Stravinsky, Milhaud, Ravel, Ibert, and the *chansonniers*.

Here are a few interesting synchronisms. Marc Chagall (b. 1887) painted "La femme enceinte," "Le soldat boit," "Hommage à Apollinaire" in 1912.[26] The première of the *Sacre du Printemps* took place in Paris on 29 May 1913. In the same year, appeared the "Nature morte à la guitare" of Pablo Picasso, "Les joies d'une heure étrange" of Chirico, "La bouteille de Bordeaux" of Juan Gris, and "La bouteille de whisky" of Louis Marcoussis.[27] The beautiful portrait of Mlle. Yvonne Landsberg was painted by Matisse, and the "Mystère et mélancolie d'une rue" by Chirico in 1914.

Let us jump ten years. In 1923, Nahum Gabo gave us "Construction," Max Ernst, "La belle jardinière," and Vasili Kandinski, "Ligne en travers." 1925 was the year of Alban Berg's *Wozzek* (Berg finished it in 1922, but it was played only three years later). The same year witnessed "La tête de bélier" by Picasso, "En bleu" by Kandinski, "Le village" by Chagall, "le Masque au pavillon" by Paul Klee, etc.

Modern music has deep roots, but its blooming began somewhat later than that of modern painting.

Let the painters paint according to their talent and their conscience and not muddle us with references to music, philosophy, or occultism.

When I admitted in the beginning that the situation was not as clear in art (as it is in science), I was referring to general feelings, not to my own. For me it is clear enough. The purpose of the arts, I take it, is to embellish life and make it more endurable. This does not mean that a work of art must always be pleasant, we need tragedy as well as comedy; but we need, above all and always, poetry and beauty. We cannot live without them. The

[26] Titles are quoted in French because they are best known in that language. English titles would be almost always translations, not originals.

[27] The third bottle, "La bouteille de rhum," was composed by Georges Braque only in 1918.

artist tries to lift up our hearts and thus to unite them, for the higher they are lifted, the closer they be.

The good artist, like the good scientist, brings men together. He is a kind of missionary whose business it is to remind us that what people call business is relatively unimportant. The things that really matter, truth, beauty, and charity, are purely spiritual.

Artists, like other people, are of many kinds. Some are meretricious, but the majority are not. Wilenski remarked: "Ruskin always dragged in the spectator. He continually forgot that from the standpoint of the creative artist the spectator is not a man but a purse."[28] What base calumny! Artists need money, of course, but they need understanding much more and will always prefer the sympathy of a man who cannot buy their works to the money of another who buys them out of snobbishness, without genuine appreciation. The weakness of many artists does not lie in greed but, rather, in exaggerated self-conceit.

If the purpose of art is the creation of beauty, then there can be no harm in the motto "Art for art's sake," but the motto of many artists seems to be a different one, "Ego for my sake," and that is not so good. Whoever thinks in those terms, whether he be a financier or an artist, is damning himself.

The alchemists or "hermetic philosophers" were led astray by their overwhelming complacency, and so are many artists of our time. The former have been cured of their folly, and the latter will be cured in the fulness of time.

To teach science clearly, without hocus-pocus, and to create works of art which be intelligible—the duty is the same in both cases.

[28] Reginald Howard Wilenski: *John Ruskin* (London, Faber, 1933), p. 268.

De Graaf's "Tractatus de Clysteribus"

WILLIAM BROCKBANK* AND O. R. CORBETT*

REGNER de Graaf published his interesting and thoughtful monograph on clysters in 1668 at the age of twenty-seven. It has never been fully translated into English, which seems a pity, but it was translated into French in 1878 under the title "L'Instrument de Molière" and adorned with illustrations that are curiously inappropriate though typically French.

FIG. 2. An eighteenth century type of enema syringe in use for many centuries. (Heister)

At the time of publication de Graaf (Fig. 1) was practising as a physician in Delft after three years of study abroad, mostly in France. He had published, four years earlier, his work on the nature and use of the pancreatic juice with its well-known picture of the dog looking remarkably happy in spite of receptacles hanging from parotid and pancreatic fistulae. He had also completed his original work on the structure of the testis which he described as being made up of tubules folded on themselves to form lobules. His work on the Graafian follicles appeared in 1672, the year prior to his death at the tragically early age of thirty-two.[5]

Two kinds of enema syringe were in common use in the middle of the seventeenth century, an ox-bladder tied to a pipe (Fig. 2) and a metal syringe, usually made of pewter, holding "one wine pint" of fluid (Fig. 3). There were obvious disadvantages to the former, which was awkward to handle, perishable, and apt to burst at inconvenient moments. There were even more disadvantages to the pewter syringe, particularly when used by an unskilled administrator, as is clearly shown by the following personal case note recorded by a medical man:[15]

> Under an attack of dysentery many years since, the medical friend who attended me administered an opiate injection from a pewter syringe about a foot in length and the size of one's leg with a long stem which was pushed

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Fig. 1. Regner de Graaf.

FIG. 3. Jan Steen's picture of enema administration.

up the rectum. The severe pain occasioned by the passage of this rude pipe and the poking of its point first against one side of the bowel and then the other from the unsteadiness of the operator compelled me to refuse to have the injection repeated and was such as I can never forget.

Three attempts had been made to construct a syringe which would allow the patient to administer the enema to himself without undue difficulty.

Ambrose Paré[13] wrote in 1580 that the syringe was in such common use in every country that doctors thought it more befitting to their dignity not to sully their hands with it, so that it had become an instrument most used by the surgeons. But there were

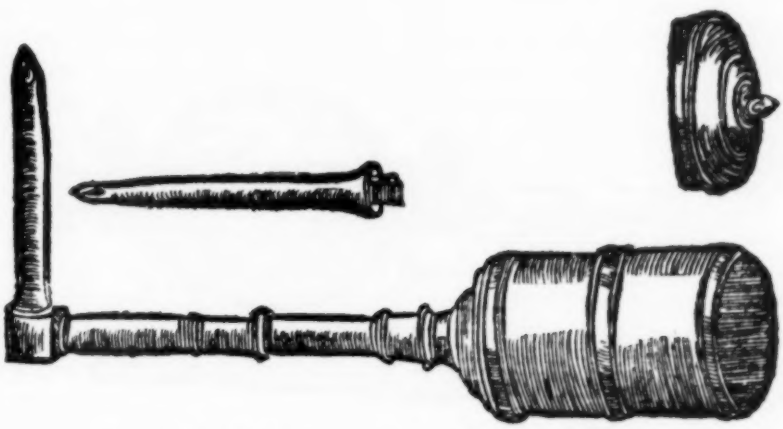

FIG. 4. Paré's apparatus for self administration.

certain difficulties: "There are many who cannot by any reason be persuaded to show their buttocks to him that should administer the clyster, a foolish shamefastness hindering them." Paré therefore devised an instrument (Fig. 4) "with which one may give a clyster to himself by putting the pipe into the fundament." Woodall[19] had a similar idea for attachment to his "glyster" syringe "so necessary and so comfortable an instrument": "There is also to be in readiness a crooked neck much like an elbow belonging to the instrument, so that however crooked the patient lie the medicine may be administered to him; and therewith also any man may give himself a clyster very easily without the help of another."

Fabricius Hildanus[6] also turned his mind to the invention of a simple syringe (Fig. 5) that could be worked by the patient. It was a modification of the bladder type, but certainly an easier instru-

ment to handle. When the enema had been prepared and poured into the bladder and the bladder closed by taps B and C, the patient was told to lie on his right side and insert the cannula A into his anus. In order to do this without difficulty he must bend his legs. After these preparations, the patient turned the tap B to open the pipe, and pressed and twisted the bladder with his hands. In this way the enema reached the bowel with no difficulty. Finally, the tap B was closed, the tap C opened, and the bladder inflated and put away to be dried and stored. The apparatus could also be used without difficulty in a sitting position.

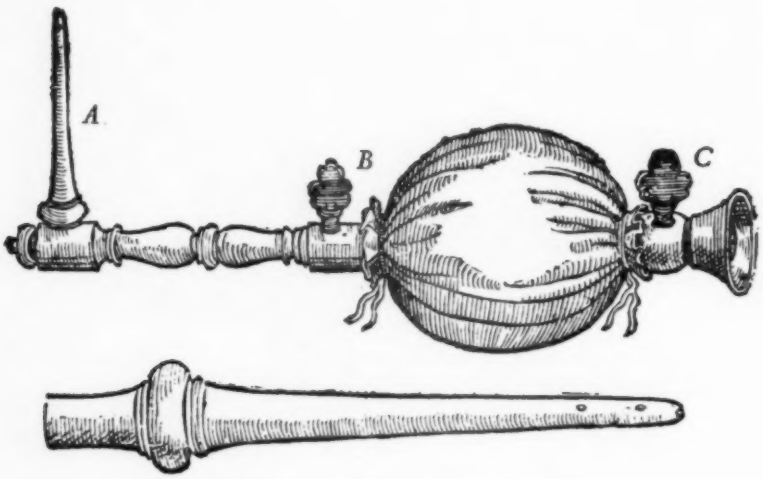

FIG. 5. Fabricius Hildanus' apparatus.

James Primrose,[14] who is known to fame as one of Harvey's principal detractors, left us an amusing little book entitled *Popular Errours or the Errours of the People in the Matter of Physick* published in 1651. The title-page showed the guardian angel of the patient preventing error and superstition (in the form of a woman) from hindering the work of the physician. "Many reject clysters as being perilous and dangerous physic but they are grossly mistaken for clysters are the most gentle and innocent physic of all for they never touch any noble part in that they go not beyond the great guts." Primrose pleaded for the more general use of the syringe rather than the ox-bladder tied to a pipe, for the former sent fluid further into the bowel.

Such was the state of knowledge when de Graaf's little monograph was published.[4]

De Graaf's Tractatus de Clysteribus

Inasmuch as it has often come within my experience as a medical man practising in this land that patients who are suffering from near and well-nigh insupportable pains in the bowels and other organs who could have obtained quick, safe, and pleasant relief by the injection of a clyster or perhaps two, could under no circumstances be induced to expose their buttocks for the injection of a clyster in the presence of a servant, I have made careful investigations whether or not someone has discovered a method by which each of us with due modesty and without danger could give himself an injection by means of a clyster, but all to no purpose; for every method, that is, as many as I know have been discovered thus far, are attended by many dangers and difficulties.

This is quite obvious when we have recourse to that method which is usually practised with a syringe, to which is attached a curved pipe made of ivory, wood, or silver-lead, so that it can be inserted into the anus, for the clyster cannot be ejected from the syringe without moving it. The pipe inserted into the anus follows this movement, so that the rectal intestine is easily damaged or else the clyster leaks past the side of the nozzle. These things easily happen when sick men cannot use both hands to guide the clyster.

Just as much difficulty and trouble are wont to be caused when the clyster is injected from a bladder, as described by Hildanus. To this instrument is attached a pipe for insertion into the anus. Now a clyster cannot be ejected from a bladder so accurately that nothing of its quantity remains and the bladder is easily destroyed or torn when it is attached to the pipe. Thus it happens that this method is favoured by very few, especially when patients cannot use both hands, as I pointed out before, so that they cannot properly keep the pipe in place in anus. For these reasons and because an instrument to my liking has not been furnished by another, I have toiled and made every effort my ingenuity can suggest and at last after much hard work I have produced an instrument which satisfies my requirements from every point of view. It is of such a description that anyone can give himself an injection with a clyster with all modesty, safety, and speed—or allow another to make the injection without any exposure of his privy parts or change of position. Doubtless I shall hear complaints from apothecaries. They will say that because I am making my instrument public property, they will in fact suffer a loss of income. Of course this objection is absurd, for whatever they lose through the injection of the clyster, they will gain through the more frequent sale of the ingredients. There can be no doubt that injections by means of the clyster will in future be administered much more regularly both by doctors and patients. Moreover, apothecaries in the future will not be forced to administer such a disagreeable and troublesome treatment in dysentery, malignant fevers, and other contagious diseases, nor will it be necessary for them to risk their lives for the sake of gain. By mak-

ing this instrument public I am quite convinced that I shall deserve the thanks of doctors, apothecaries, and the sick alike, on whose behalf I have spent all my skill and toil. Therefore I intend to publish boldly a description for all to see. To give a complete account of it, I shall say what a clyster is, by whom it was invented, its varieties, the appropriate quantities, the timing of an injection, the position of the patient, and lastly the advantages it has for the sick.

The word clyster, κλυστηρ, coming from the verb κλυζειν, means in Latin a cleansing. The Greeks have another name, ενεμα, from ενιημί, which in Latin means an injection and is used for the different treatments which are usually employed. When it is used for the treatment of various organs, it takes an additional name. Thus we have a clyster for the ear, bladder, uterus, or bowel, and so on. In this paper I shall deal principally with the clyster intestinalis which I define as a fluid remedy injected through the anus into the large intestine. By some the phrase is applied not inappropriately to the instrument by which the injection is made. No one can pride himself on the discovery of this remedy, since owing to natural instinct we find it in man and beast alike. We know there is in Egypt a bird called the Ibis, not unlike a stork, which first showed us the use of the clyster.

This creature, conscious of being heavy with a mass of noxious humours, fills its beak with sea water and washes out that part which is the natural outlet for the over-loaded belly, making it wholesome. Doctors of to-day copying this bird have generally adopted this treatment, but they did not originate it as some erroneously think. We read in the letters of Langius[a] (Bk. 1 Epist. Med. LXXX) that the clyster was in use not only among the Egyptians, but among the Greeks and Arabs as well. It was employed most frequently in serious cases and on many occasions was a last resort to which they turned as to a heavenly refuge, not only for cleansing the bowel. Herodotus relates that they cleaned out the bowels three days every month to maintain good health and to cure the most serious disorders. Some inject a clyster into the anus to loosen and separate the faeces in the bowels, but other for a different reason. Solinander[b] recommends oil to loosen the faeces which harden in the large intestine and to bring about their ejection. Aetius used clean water; Galen, water mixed with honey. There are some who still prescribe many ingredients in their medicaments for the same purpose. But following my reason and the natural instinct of the birds I give it as my opinion that we achieve our aim if we merely make the clyster with sea water or ordinary water in which a little salt has been

[a] J. L. Lange (1485-1565) practised in Heidelberg, being physician-in-ordinary to the Elector Palatine. He accompanied him on many long voyages and in battle against the Sultan Soliman. The two parts of his *Medicinalium epistolarum miscellanea* were published in 1544 and 1560.[a]

[b] R. Solinander (1525-1596) studied in Louvain and travelled extensively, visiting most of the famous universities in Italy and France before returning to his native land, the Duchy of Cleves. He became physician to Duke William, holding the post for thirty-seven years. His published works are not very remarkable.[a].

dissolved, or the urine of a healthy man, should other ingredients not be to hand. The fluids I have named dissolve by their moisture the hardened excrement, and the pungent salt by irritating the bowels brings about the ejection of the disintegrated particles. These two properties are sufficient to cause the excrement to be brought forth.

There have been times when I have seen a clyster compounded of a quantity of different elements with electuaries, oils, and other ingredients of no effect, but one composed of water, honey, and salt is most efficacious. This has been considered by many a secret not to be divulged.

I would ask doctors, and especially those who at any time practise among the poor, to give their attention to this and to learn how they can relieve pain at a trifling cost. But clysters have further uses besides the opening of the bowels. They can be made up from different elements, simple or compound, and, depending on the properties of these, are called by the authorities emollient, purgative, astringent, anodyne, cleansing, carminative, consolidating, and lastly nutrient.

Emollients are called either simple or compound. They are called simple inasmuch as they consist of one single substance, milk, warm water, mutton broth, etc., and they are called compound insofar as they are made up of various emollients, malva, althaea, violaria, branca ursina, parietaria, etc.,[c] which are boiled in water, milk, or some other emollient. After boiling, oil is added, such as that of violets, sweet almonds, butter, etc.

But when a purgative clyster is made up, assuming an emollient has been prepared, senna leaves are added, or rhubarb, mechoacanna, etc., electuarium diaphoenicum, confectio hamech, or other purgatives used commonly by doctors.[d] Whether senna leaves, rhubarb, and other purgatives are as much use in clysters as many assert, I leave it to others to decide. I think it is better to put in a drachm or two of salt with honey than a whole ounce of senna leaves since they cause a more satisfactory ejection of the excrement by irritation than senna leaves and other purgatives which are not so pungent. Astringents are made up of a brew of radicum bistortae, corticum granatorum, myrtle berries, plantain leaves, tapsi, caudae equinae, also florum rosarum rubrarum and pomegranate flowers to which are sometimes added mastix, bolus armena, sanguis draconis, starch, and such like,

[c] Malva and althaea belonged to the genus of the mallows and were mucilaginous. Violaria was obtained from a group of tropical shrubs and had emetic properties. Branca ursina or bear's paw was the plant acanthus mollis which had a viscous juice. It was an emollient and was employed in enemata, cataplasms, and fomentations. Parietaria was the wall pellitory esteemed as a diuretic and astringent.[12]

[d] Mechoacanna was a purgative root, possibly jalap. Diaphoenicum was an old name used by Galen for an electuary containing dates, scammony, ginger, black pepper, mace, rue, fennel seeds, etc. Confectio de Hamech, called after an Arabian physician, contained amongst other things violets, colocynth pulp, common polypody, wormwood leaves, thyme, senna, rhubarb, prunes, red rose leaves, aniseed, and other aromatics mixed with sugar and honey. It was used as a purgative and in enemata.[12]

which contain no fat.[e] Those that contain oil and fat are not astringent.

To allay pain, clysters called anodynes are composed of the emollients set out above with the addition of flowers of cloves, camomile, crocus, linseed, marsh mallows, foenugreek, poppies, and other anodynes. Of these a suitable quantity are boiled together, in mutton broth or cow's milk as long as is necessary, and the yolk of an egg is added to colour it. When pain is intense a drachm of philonium romanum is added or five grains or more of laudanum.[f]

Griping pains are due to various causes—some to salty or acid agrimony,[g] others to inflammation, distention of the bowels, and so on. A careful doctor having made his diagnosis will prescribe the appropriate enemata. You cannot fit everyone with the same pair of shoes.

Cleansing clysters are usually prescribed by doctors from barley, bran, roses, beet, mercuriale, agrimony, lesser centaury,[h] pounded lupin seeds, honey of roses, white or brown sugar, and such like detergents recommended generally by the authorities. Should the bowels be ulcerated we must give preference to astringents which have the property of drying.

Carminatives are usually a compound of marjoram, rue, calomine, flowers of camomile, cloves, anise, caraway seeds, fennel, cummin, laurel berries, and others which have the property of making wind.

Likewise consolidants are compounded of comfrey, broom, alchymilla, pyrola, and such as heal wounds. These are boiled in fresh milk and afterwards are added yolk of egg and goat fat, turpentine dissolved in yolk of egg, balsam of sulphur, etc.

The clysters I have enumerated can be applied to different parts of the body, should certain elements be added. Thus if you use cephalics it is

[e] Radicum bistortae was the root of snake-weed. It contained tannic and gallic acids. Corticum granatorum was the rind and root of the pomegranate. It contained much tannin. Myrtle berries were some relation of the bilberry. All were used as astringents. Tapsi was a brown rubefacient resin with effects on the skin similar to those produced by croton oil. It was used as an emetic and a purgative. Caudae equinae, the horsetail, was used as an astringent, a diuretic, and to promote the healing of wounds. Florum rosarum rubrarum was the flower of the rosa gallica. It contained gallic and tannic acids and was mildly astringent. It is represented in modern pharmacopoeias by the acid infusion of roses. Mastix was a resin. Bolus armena was a reddish brown earth found in Armenia and other places. It contained iron oxide. Made up into little flat cakes it was astringent and was used to treat diarrhoea and piles. Sanguis draconis (dragon's blood) was the dark red resinous juice of the fruit of calamus draco, an iris.[12]

[f] Crocus was regarded as a stimulant aromatic having anodyne, antispasmodic, emmenogogue, and aphrodisiac properties.[12] Foenugreek was an anodyne. Gerarde[7] tells us that if it was "mingled with goose-grease and put up in the manner of a pessery or mother suppository, it doth open and mollify all the parts about the mother." Presumably an anal suppository had a similar effect on the bowel. Philonium was an old term for a narcotic antidote. Philonium romanum was a compound of many substances including opium and, rather oddly, white pepper.[11]

[g] Agrimony was the term formerly used to denote certain unnatural conditions of the humours of the body which produced disease as they were thrown out of the system and chiefly by the skin. Such was supposed to be the cause of most skin diseases, of cancer, tuberculosis, gout, and similar affections.[12]

[h] Mercuriale was a plant reputed to have been discovered by Mercury. It was said to have hypnotic and mild aperient properties and was used in clysters. Agrimony was a bitter and a stryptic used in gargles for inflammation of the mouth and throat and in clysters to treat diarrhoea. Centaury also was a bitter.[12]

called a cephalic clyster; if stomachics, stomachic; if splenetics, splenetic, and thus clysters will take various names according to the substances used in their composition.

From what we have said it is quite obvious that cooling and heating clysters can be made up and those who would like the prescriptions of these and other clysters may consult Rondelet on internal medicine, Wecker on clysters, Sennert and others who give a sufficiently full account of them.[1]

Whenever a man is deprived of all food and can take nothing or is averse to all food or he cannot retain or digest what he has swallowed, the question then arises—can he not be helped when his strength is failing on account of lack of nourishment, by the injection of food into the anus by means of a clyster? Those who defend this method say that it is not necessary for the production of chyle that nourishment should digest in the stomach since the intestine itself has the power of making chyle. They advise that clysters in greater quantity and with greater force than usual should be injected into anus as, for instance, clysters of wine, barley water, fresh milk, mutton broth, yolk of egg, etc. which being dissolved and mounting higher are better digested by the small intestine.

To these one can reply that that is true of the more liquid type of nourishment and those which ferment easily but that the same is not applicable to the more solid substances which are more difficult to digest; and although they may be right in the first case, yet they cannot prove their case from that fact since clysters, whatever be the force with which they are administered, naturally do not go up beyond the large intestine on account of the valve at the end of the small intestine, discovered by Bauhin. This bars the entrance from the large to the small intestine so effectively that if the large intestine in men, pigs, etc. is distended by food, no wind can make its way to the small intestine. Therefore it is useless to suggest that injected nutriments are digested in the small intestine. It is equally useless to state that clysters are attracted by the stomach. Hence every conclusion drawn from this fact is based on slippery and weak foundations.

Whatever change then takes place in nourishment injected through the anus must be completed in the large intestine among the faeces from the stomach, and it may properly be asked how this food prepared on that dunghill affects the other parts of the body since no lacteal veins, or at least very few, reach the large intestine: of necessity that nourishment which passes from these to the heart or other parts of the body is held to pass through the mesenteric veins as there is no other way. Since this is considered impossible by many, so it is that these opinions need further proof. I could never demonstrate clearly enough that chyle passes through the mesenteric vein to the heart, but I saw when effervescing was caused in the intestine by oil of vitriol and oil of tartar by their mixing, that sometimes the mesenteric

[1] G. R. Rondelet (1507-1566) was professor of medicine and founder of the anatomical theatre at Montpellier. J. J. Weckerum (1528-1586) was the town medical officer at Colmer in Alsace. He wrote several books but they were mostly compilations. D. Sennert (1572-1637) was professor of medicine at Wittenberg.[2]

veins were inflated together with lacteal veins, but whether this is sufficient proof that chyle passes naturally through these veins to the liver and then to the heart I would not dare to assert. However that may be, from what I have said it is quite obvious that clysters intended for nourishment do not bring so much benefit to the body as some have thought, but I am unwilling to deny that they can give the body some strength, as I see daily that the weak are cured by spirits and those who faint are restored by sweet scents. Hippocrates remarks on these in his book thus: "whoever is in need of a quick restorative, a liquid medicine is the best to restore him to strength. Whoever needs a quicker restorative let it be applied through the sense of smell, but if the case demands a somewhat slower restorative, then let him take solid food." In the ninth book of Diogenes Laertius the story is told of the death of Democritus. His sister kept him alive for three days with the smell of warm bread lest he should die on the feast of Ceres. He jests about him thus: "What man, seemingly so wise, ever came to such an end as Democritus, though he knew everything? For three days he held on to this life and a woman kept him alive with the smell of fresh cooked bread."

If then a subtler element in the matter injected could pass through the walls of the intestine and with the blood to the heart, it could doubtless strengthen, but not nourish, since further properties are needed for nourishment in addition to constituents which are volatile and easily broken up; but what this is and how it can reach the heart in sufficient quantity escapes me.

I remarked above that there is nothing which passes naturally from the large intestine to the small, but in the experience of many it has been ascertained that there are times, almost contrary to nature, when the peristaltic motion of the intestines has been arrested, the valve of Bauhin relaxed, and clysters have been vomited up. You may see this in Galen, Sennert, Pareus, Bartholin, and others. Some of them also state that suppositories have been vomited up. It is to be noted what Sennert[1] writes (Pract. lib. III. pt. II, sec. 1, cap. 1) about a certain girl of twelve who was suffering from severe griping pains. She not only passed nothing through the bowels, but not long afterwards vomited up the faeces and also the clyster which had been injected. After this had gone on for three days a long suppository was inserted through the intestine to the stomach and was vomited up, in

[1] Much of the early part of de Graaf's monograph has been taken from Daniel Sennert's writings. The bibliographical detail is incorrect in one particular and should read section two and not section one. The story of the twelve-year-old girl is quoted almost word for word, but Sennert[17] gives the reference to "Matthaeus de Gradib. im practic. c. de vomitu." The correct reference is *Practica* by Giovanni Matteo Ferrario de Gradibus (Venice edition, 1502; secunda pars: De aegritudinibus stomachi, caput V, de vomitu, Fol. CCXIII, verso, col 1)—see Parkes Weber.[18] De Gradibus was born at Milan at the end of the fourteenth century. He became professor of logic and of the practice of medicine at Pavia, holding the chairs for many years and until his death in 1472. A most interesting figure in fifteenth century medicine, he has left us three works: his Lectures on Avicenna (1494), his surprisingly revealing *Book of 108 Consultations,* and his chief work *Practica,* published in two parts, the second being issued in 1471.[1]

the time it takes to say a Paternoster and an Ave Maria, as Matthew de Gradib who states this fact asserts. Later another suppository was attached to a thread and the thread being broken it forthwith passed to the stomach and was vomited up together with the thread by the sick girl. Again a third time another suppository was inserted tied with four stronger threads and soon afterwards the threads were broken and the suppository was passed through the mouth together with some of the threads. At last the doctor told the girl's mother to insert yet another suppository which was attracted upwards with such violence that the mother was forced to withdraw it that it might not be drawn upwards. At last this girl was cured, so they say, by prescribing decoctions of a somewhat milder kind which eased the griping pain.

The amount of the clyster varies in accordance with the patient's age; for an infant at first three ounces suffice, gradually increasing to four as the child grows, or maybe five or six ounces. For an adult twelve ounces or more are usually prescribed, but it must be borne in mind that in cases of advanced pregnancy the amount of the clyster must be less, since it not only compresses the foetus, but is ejected, as if the foetus expelled it. Secondly in those suffering from stone or inflammation of the kidneys the quantity of the clyster must not be excessive lest by overloading the bowels you increase the pain by the added weight. Thirdly, in the case of those whose bowels are swollen with wind great care must be taken not to inject too large a clyster nor administer it with undue violence. Should the injection be made into a confined area, the intestine becomes still more distended and thus the pain of the patient is increased. In such cases it is more beneficial to make a six-ounce injection with good results than to prescribe twelve ounces to no purpose.

Clysters for injection into the anus must be neither hot nor cold, but luke-warm; if they are too warm and are injected into the intestine when blocked by slime or tormented by wind it is impossible to retain them with comfort. Cooler injections must be given in cases of burning fevers and other ailments where there is need of cooling. In cases of pregnancy clysters must not be too warm. The bowels in pregnancy are usually very sensitive, and clysters are often expelled immediately after the injection without doing any good. This has been noted to have occurred in the case of those who bowels are very sensitive. Their weakness may be aided thus: immediately after the injection the anus may be squeezed with some pressure of the hand, and moreover the patient must be advised to contract the sphincter muscle as hard as he can.

The actual time when a clyster should be injected does not require such careful attention on the part of the doctor as the application of purgatives. In ancient times, and later according to Massarias[k] (f.m. 688) doctors were so averse to using purgatives before the coction of the humours that they seldom used even mild ones, but in place of them were accustomed to

[k] A. M. Massarius (1510-1598) was a physician and anatomist who held a chair in the University of Padua.[s]

prescribe clysters.[1] Since they do not prevent the coction of the humours, clysters are applied with as much safety at the beginning, height, or crisis of an illness as at its decline. A clyster can be given at any time of the day, but in my opinion the best time to give it is three or four hours before food, provided of course there is no urgent need for making the injection, that the equilibrium of the stomach be disturbed as little as possible. The clever and successful Parisian doctor D. Fabre has told me that he has often prescribed a clyster with excellent results when patients suffered from feverish shiverings. By this means the bowels were cleared of faecal material retained at the time of the paroxysm.

The time for the retention of injections depends usually on the type of clyster. Those which are meant to cleanse thoroughly ought not to be retained for more than half an hour, while those intended to alleviate pain should be retained longer, and longest of all those which have glutinous properties. Those which act as purgatives come forth of their own accord and if they remain too long in the body it is expedient to insert a suppository so that the bowels may be coaxed to a speedier expulsion of their contents.

Doctors are not agreed on which side patients should lie for an injection —some think they should turn on their right side, others on their left with better results. Those who prefer the rightward position say that the injection penetrates the large intestine more easily, inasmuch as in that case the entrance to the intestinal colon which is on the left side is not compressed: should the patient lie on his left side they think it is crushed to some extent by the weighty mass of the rest of the bowels. Those who prefer their patient to lie on his left side believe that the large intestine cannot be so easily compressed that an injection may not enter in sufficient measure and so because the rectal intestine with its sigmoid loop is turned leftwards, an injection can pass easily through the large intestine beneath the belly. They think this is impossible if he lies on his right side: for in that case the injection must first pass to the left side because of the position of the bowels, before it traverses the remainder of the intestinal colon. As regards this controversy, from the knowledge of anatomy which I acquired from dissecting many bodies I think it makes but little difference on which side the patient lies. But if I must choose this position, I should lay him on his back, for then the large intestine which is situated on the left side will not be so compressed and the injection will not be prevented from passing upwards, as is thought to happen if he lies either to left or right. And that the injection may reach all parts of the intestinal colon still more easily, I should advise patients to turn now to the left and then a little to the right and then to rest on the side in which they feel most pain. I am not concerned

[1] This passage is difficult to translate. We found subsequently that it is in part omitted in the French translation. "The coction of the aliments in the stomach is their digestion or reduction to a sort of emulsion or chyle." "The coction of the humours is the reduction of the chyle to blood."[11]

as to the manner in which a clyster may be injected when patients lie on their backs, since this can be done very easily by means of the instrument which I shall shortly describe.

The use of the clyster is of such importance that there are no parts of the body which cannot benefit in some way from it: but in greater or less degree according to their proximity to the large intestine.

Injections are most beneficial in intestinal disorders, constipation, colicky pains, diarrhoea, ulcerations, worms, etc. They are most useful, too, in kidney and bladder trouble and in affections of the uterus and mesentery. The clyster is also of great value in cases of headache, as is proved by daily experience. I have grave doubts whether this comes about by the attraction of the noxious vapours from the head to the large intestine, since we do not know how this happens. Therefore I prefer to take my stand with others that the clyster is of very great benefit to the head, since it frees the large intestine of excrement and so stops its fumes from rising to the head, rather than because it attracts noxious vapours to itself.

In all cases of fever and especially in acute cases, practitioners up to this time have unanimously asserted with Galen that the use of the clyster is most beneficial and there is in general use a certain type of clyster called the "common" clyster, which generally speaking is a compound of leaves of mallow, mercurialis, beet, violaria, or of honey or sugar and salt.

Here we must note that (i) In a properly prepared injection, oil or other fats must not be administered because of their properties of generating heat; (ii) In injections which are meant to irritate the bowels, fats ought not to be included, since they so weaken the force of the irritants that they cannot now achieve the effect they should have done under other circumstances; (iii) Cassia pulp is often added to an injection but with more harm than good. If a small dosage is included, nothing happens, but if we prescribe a large dose, it will make the injection somewhat pulpy and this will lessen the value of the other ingredients. D. Isbrand de Diemerbroeck, practitioner and professor of anatomy in the University of Utrecht, a most eminent authority, has duly warned us of this danger. When I began my medical studies under his direction, he gave me such a good grounding in anatomy that should I have made any progress in this science I owe it primarily to him.

Great care must also be taken that injections which apothecaries make up of mallow, althaea, mercuriale, violaria, beet, and such like and which we call common injections, do not become sour and rancid; for it easily happens that such common decoctions, which are kept ready, are spoiled because they remain fresh only for a day or two in summer though the apothecaries say they can preserve them a little longer by adding oil. But if when subjected to due examination, they are found to be putrid and evil smelling, causing headaches, griping pains, movements of the uterus, and similar disorders, it is very necessary to prescribe a fresh material and to tell the apothecary not to put in the mixture syrups which have already gone

bad instead of sugar and honey. Nothing causes greater harm to patients than such ingredients when they have become rotten.

Moreover the clyster has an important use whenever the bowels are so bound that a purgative would seem to be necessary, taken through the mouth. First let the bowels be softened by a gentle injection, that the hardened faeces may not resist expulsion and delay the fluids driven into the intestines by the action of the purgative. Should they be retained there on account of the accumulation of hard faeces in the bowel, they may cause griping pains, colic, loss of control, giddiness, and other most serious symptoms.

Hippocrates seems to refer to this when he writes: "If you wish to effect a purge you must cause fluidity" (aph. 9. sec. 2). Now this fluidity can be caused in many ways and in this respect injections must not be overlooked. Galen commends this advice (sec. 4 de Victu acute et aphoris 70. sec. 7), "Hippocrates writes: whenever you wish to effect a purge, you must cause fluidity. Should you wish to cause vomiting you must stop the bowels, but if a bowel movement you must use an injection." The bowels cannot be loosened to better advantage than by the use of the clyster. Galen also refers to this when discussing why a purgative may not be successful. "Generally speaking," he says, "there is in the bowels a mass of dry excrement which stops evacuation."

From this it may be gathered how stupidly those patients behave who although they are very ill prefer to take purgatives than allow an injection. For this reason they expose their own lives and the doctor's reputation to many dangers. If perchance a sick man dies, as can sometimes happen after the taking of purgatives, the doctor will surely hear that he dispatched him on his long journey. Therefore it is better as Solinander remarks (p.m. 35) to administer several injections repeated one after another, than to take even one dose of a weak purgative.

In addition to my earlier remarks the clyster has an even greater advantage. Generally speaking, this type of treatment frees the bowels without excessive effort, causes no damage to health, no debility, and does no harm to the bowels. Likewise after its use there is not that constipation we see after the use of purgatives, for the more patients are moved by cathartics, so much the more constipated do they become on the following days. Hence Galen in cases of prolonged illness made use of gentle and soothing injections into the bowels. For example, in the case of old men, he writes that an injection of oil can be of the greatest benefit, since they are naturally cold and dry.

Therefore, since the clyster can often be a swift and safe remedy in great pain and can give instant relief to sufferers, I have done my best to find a means by which patients with all due modesty can give themselves an enema. At last I have devised an instrument by which not only can injections be given into the anus, but also by a mere change of the nozzle they can

very easily be given to the uterus and other parts of the body without any fear of pain or damage.

In like manner I have devised an instrument for effecting transfusional surgery. I began this work successfully here in Delft on a previous occasion when, in the presence of an interested throng, I inserted so many duck's quills into one another that they made a tube long enough for my purpose. But even greater success was achieved by means of my instrument for which I use a length of intestine, some ten or twelve fingers' breadth long, taken from some small bird. To both ends is attached a quill of a duck, or of some other creature, by means of which an entrance is effected without difficulty into the veins.

By this means not only are we able to count all pulsations by merely placing our hand on the small length of intestine, but the flow of blood can also be stopped at will by a gentle pressure. When this instrument has been properly prepared, blood can be transfused from one creature to another with far greater ease than by means of the instrument, made of silver or brass, which is used in Paris to effect this operation. My instrument is made of a flexible material– so animals need not keep the same bodily position, as is the case with the other instrument which is rigid in the middle. This I merely mention in passing, because my subject is not transfusional surgery, but to set out certain interesting facts about clysters which we should know and lest I should explain in too little detail my instrument, a description of which I shall now try to give (see Fig. 6).

"A." The nozzle which is inserted into the anus is made of wood, unlike that of the clysters in general use. Usually these nozzles are excessively long and this involves not only disadvantages, but also dangers. It is sufficient that the upper part (b) pierced by several small holes should pass a little above the sphincter muscle, because the length of the nozzle shown here gives sufficient scope and the lower part (c) has been so devised that when inserted into the anus it fits exactly and prevents anything running out by the side of the nozzle.

"B.B.B.B.' The tubing is light and about one or two ells in length, made of a very flexible material and with a lumen through which the injection propelled from the syringe passes with the same ease and speed as through a nozzle affixed directly on to the syringe. This tubing of mine has almost the same appearance as that the English brought into use some time ago, to blow tobacco smoke into the anus.

"C." The contraption is made of wood and to its lower part (d) my tube is fastened securely; the upper part (e) which is affixed to the syringe in general use has been hollowed out like a spout, that the clyster may pass more easily into the tubing.

This instrument being prepared, you fill an ordinary syringe with warm water in the usual way, fasten instrument C to the syringe and pass the water through its length so that it passes through the nozzle (A) and no air enters the anus. Next pass part (b) of the nozzle smeared with candle grease into the anus and while one hand is engaged and the syringe is held

breast high by the other, inject the clyster into the anus, or you can pass nozzle (A) affixed to the tubing (BBBB) to the patient as he lies covered with the bed-clothes, so that he can insert it in his own anus. This is easily done because of the flexible tubing affixed to the nozzle. When this is fixed in the anus the patient may lie either on his back or on his side as he pleases and tell the attendant to propel the clyster from the syringe which

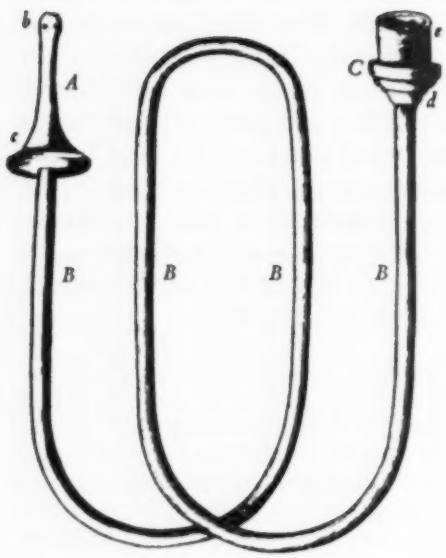

FIG. 6. De Graaf's enema tube.

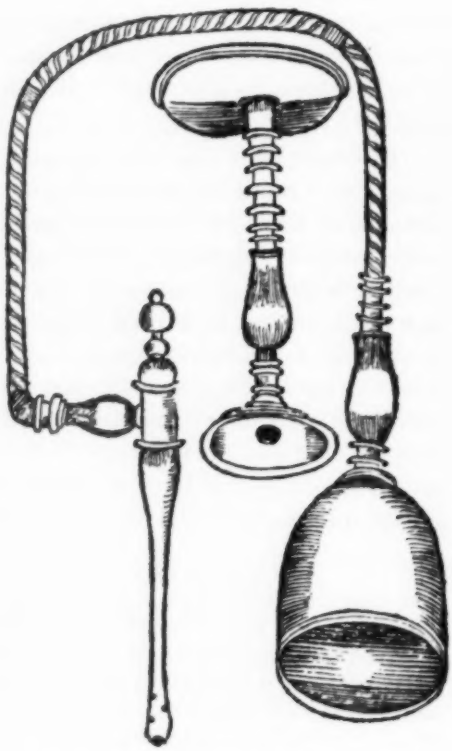

FIG. 7. Bartholin's flexible tubing.

is outside the bedclothes. And this is so simple an action that none of my patients refuse an injection any more—and more important still, those who formerly could not be induced by any means to allow an injection now ask me of their own accord to prescribe a clyster instead of a purge.

These are the facts which it seems to me ought to be mentioned about clysters for the moment. Later, should there be others which I can discover by which the public good can be advanced, I shall not fail to publish them to the learned world.

De Graaf did not tell us the composition of his flexible tube for rubber was unknown in Europe at the time. Possibly it was like that described by Bartholin[2] in 1661 (Fig. 7): "The inside of the tube is made from copper wire twisted into coils which are like

a great number of little rings of equal size attached to each other in turn. Over these is fitted a covering of leather carefully sewn together so as to let no liquid through. Its sides are kept apart by the coils already mentioned." Nor did de Graaf show us a picture of his syringe, but elsewhere he illustrated one (Fig. 8) he used for injecting cadavers.[8] We are indebted to Scultetus,[16] who was a

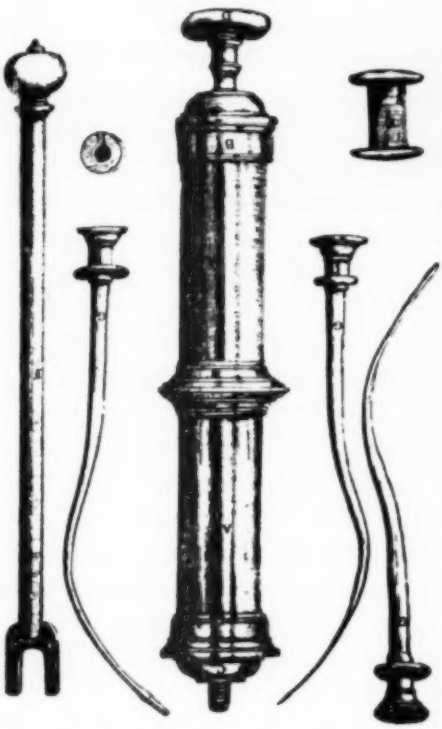

FIG. 8. De Graaf's syringe for injecting cadavers.

FIG. 9. Scultetus shows de Graaf's apparatus in use.

great believer in visual teaching and was lavish in the illustration of his textbook on surgery, for showing us de Graaf's methods in use (Fig. 9).

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Coffeehouse Cures

JOHN KEEVIL*

WE owe a debt to quacks. The commercial exploitation of illness has for thousands of years caused incalculable suffering and sorrow, but it has at times made a contribution to medical progress. Unorthodox manipulators have advanced orthopaedic surgery, and some quacks developed special skill in the treatment of patients afflicted with cataract or with stone, and this at a time when physicians and surgeons could do little to treat these conditions. But apart from such positive contributions, the quacks made a negative one to the medical profession by forcing the authorities to establish standards of skill and conduct and to found corporations to control its members. The Company of Barber Surgeons, founded in the reign of Edward II, was the precurser of all such institutions in England.

But even after the establishment of these bodies, the difference in conduct between the legally qualified practitioner and the mountebank was often hard to detect: both qualified for the term "quack," since both made use of secret remedies, both advertised extensively, and both were boastful pretenders to skills which they did not possess. It was often only a matter of degree, but in general the legally qualified physicians, surgeons, and apothecaries could rely on the authority and social prestige of their respective corporations to avoid the stigma of the name. The quacks, on the other hand, depended on the appeal which their claim to a direct, supernatural, and mysterious gift must make to the credulous: their very lack of training and of legal recognition could then be cited as evidence of individual and peculiar powers, while the recognition of such qualities by a patron flattered his vanity.

All through the ages these forces have encouraged and maintained the quacks: in 2000 B.C. they appear on Assyrian clay tablets; Titus Junianus accompanied Julius Caesar to Britain because of his reputed skill in clearing the sight, and two thousand years later half the populations of the United States and of Germany were consulting quacks, while Abram's Box was causing learned conflict in England. But in England the period of their most flamboyant claims was the hundred and fifty years following the Restoration.

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Its quality is preserved for us in the broadsheets which were given to pedestrians in city streets, nailed to posts and doors, and in a later period distributed in the coffeehouses, where eminent physicians were themselves ready to see patients or hold consultations. Indeed, the coffeehouses catered for every taste and supplied remedies for all ills: the cautious and orthodox could pay their guinea to the great Dr. Richard Mead for his advice, while those who liked to decide their own treatment had only to consult the handbills. Many of these did in fact advertise legitimate treatments by skilled and experienced men such as Wilcox,[1] a former cupper at the Royal Bagnio, who, after twenty years there, set up at The Turk's Head in Newgate Street and was ready to sweat, bathe, shave, or cup "after the best Manner," either at the coffeehouse or at his patrons' homes. At Peel's Coffeehouse in Fleet Street, John Hinge[1] was in attendance to deal with corns and nails each morning, and later in the day made a circuit of half a dozen other coffeehouses to make appointments.

These men, the ancestors of the medical ancillaries of today, served an honest and useful purpose, but they merged imperceptibly into another, less reputable, group. Of these one could cure the toothache; another had a safe and effectual remedy against painful muscular conditions and drew attention to the virtues of the essence of mustard to be bought at his shop in Soho. Such indefinite maladies were ideal for exploitation, but apart from all the conditions which could be called rheumatism, the quacks were quick to design cures for other indefinite maladies—for epilepsy, deafness, numbness, and weakness of the limbs.

Particularly at the Restoration it was the seller of cosmetics and the beauty specialist who flourished. Not only did these men supply face and eye washes, lip salves, and paints, they also provided night masks and forehead pieces to raise low foreheads, and they were ready to reshape an eyebrow to conform to a new look. When the young Boswell was lodging in Downing Street, "Signior Albini[1] from Italy, lately arrived in Town," and describing himself as "Operator for Ladies," set up in Pall Mall as a beauty specialist. He claimed to "give a Transparency to their Nails on Hands and Feet, and Tinge them of any Colour . . .," to "elevate or depress their Foreheads, at pleasure"; he practised body massage too and could therefore "rectify their shape." Eminent phy-

[1] Advertisements and broadsheets of Albini, Graham, J. Hayman, J. Hinge, Lockyer, Wilcox, Willich, *et alii* in an unindexed collection at the Wellcome Historical Medical Library, London. Most of the items can be dated only from internal evidence.

John Hinge
Operator for Corns, & Nails.
Attends at Peel's Coffeehouse in Fleetstreet, Every
Morning at Eight of the Clock, Sundays Excepted.
Heal so Attends Tuesdays, Thursdays, & Fridays
at the Royal Exchange, during Change Hours.
& from thence goes to the Portugal, Rainbow, Jerus
lem & Cardina Coffeehouses all near y Royal Exchan
Likewise Attends on Mondays, Wednesdays, &
Saturdays at Wills Coffeehouse, near Lincolns Inn
& Georges Coffeehouse in Coventry Street, near y
Haymarket. To Receive the Orders of those
Gentlemen & Ladies, who please to honour
him with their Commands.

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Broadsheet in the Wellcome Collection.

Prospect of the Original House, built by the late
SURGEON NORTON, inventor of MAREDANT's DROPS,
the South side of Golden Square, London; — now the
residence & property of his Assistant & successor,
Mr JOHN HAYMAN;
to whom all orders, foreign & domestic, for this celebrated
Antiscorbutic, are recommended to be addressed.
Sold at 5s 5 — 11s 6 — & one Guinea pr Bottle; those at 5s 5
are retailed by the general venders of Medicine; the
others can only be obtained at Mr Haymans.
For a test of the purity of this remedy, when bought of
any retailer in Town or Country, see that the words J. Hayman
Golden Square are engrave on the Government Label of each
Bottle; a favor done the Proprietor by the Stamp Office
Comm.rs of Stamps which it is Felony to imitate.

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Broadsheet in the Wellcome Collection.

Pharmacopola Circumforaneus, OR
The Horse Doctor's Harangue to y^e Credulous Mob

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Broadsheet in the Wellcome Collection.

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sicians had not hesitated to compound cosmetics—Sir Theodore de Mayerne had written elaborate and detailed prescriptions[2] for beautifying the skin of Queen Henrietta Maria—and it was inevitable that the quack should seek prestige in the province which a great physician had regarded as a proper one for his inventive skill: the door thus opened, the quack himself invaded the physician's province and prescribed for the numberless skin diseases of an unwashed population; but John Williams[3] was probably nearer the mark when he advertised in the *London Journal* for Saturday, June 15, 1734, and adorned the entry with a small wood block illustrating six bugs. He was both an experienced bug destroyer and a tactful man, suggesting that the bugs were always "brought in by People's Clothes from other Houses." He could be consulted at Janaway's Coffeehouse in Cornhill, Dick's at Temple Bar, and The Rainbow near Charing Cross.

Had all the treatments been applied to the surface of the body, where results could be watched, all might have been well, but the charlatan found interior treatments more profitable. In the late seventeenth century an "Experienced High-German Doctor,"[1] who couched for cataract, could "cure to Admiration, in a short time, Obstructions, Suffusions, Dimness or Darkness . . . Pins, Webbs and Skins of all kinds" in the eyes, remove stone by cutting, and treat rupture, cancer, the King's Evil, the falling sickness, and of course, *morbus Gallicus,* and all "for the Publick Good." He certainly worked long hours, for from 8 a.m. to 9 p.m. he could be "bespoken with" at The Angel and Bull near Temple Bar, where his door was to be identified by the "Pictures of Patients and Manual Operations" over the lintel. John Russell[4] flourished at the Restoration, describing himself as "Physician and Oculist, at the Two Blew Posts against Gray's Inn," and advertising his Elixirated Spirit of Scurvy Grass, his Pectoral Lozenges, and his Worm Powder, perfected after thirty years of trial. Between them he could cure every distemper, and he listed a large number of these on his handbill, describing in each case the manner in which the cure would operate. He rode far and wide, and his nostrums were available at various provincial grocers' and other shops, at inns and from barbers, postmasters, and booksellers. His bill was

2 Mayerne, T. T. *Case book.* M.S. with holograph notes. Undated. Royal College of Physicians of London.

3 Williams, J. *London Journal,* June 15, 1734. Newspaper cutting at the Wellcome Historical Medical Library, London.

4 Russell, J. Broadsheet formerly in the Library of the Worshipful Society of Apothecaries of London (sold at Sotheby's Auction Rooms, 27 October 1953).

decorated with a frame of crude woodcuts illustrating many dramatic surgical operations and headed by his own portrait. There were few dangers in such a trade and the rewards might be great: Charles II knighted Robert Talbor, an apothecary's apprentice, for successfully treating his ague with Peruvian bark; Queen Anne knighted William Read, a jobbing tailor, for his treatment of her weak eyes, while most quacks could claim at least one distinguished patron and protector: Sir Robert Walpole was such a firm believer in Johanna Stephens' cure for stone that the secret was bought by the nation in 1739,[5] when he was First Lord of the Treasury; the reward in this case was £5000, a sum to which Parliament subscribed three-quarters.

Great names were introduced without hesitation into the handbills: an "ex-Apothecary to the Prince of Wales"[1] advertised a number of Royal and Sovereign remedies which, he declared, had been employed by various members of European royal houses. Others struck a more serious note by adding letters of testimony, sworn before Aldermen and duly witnessed, or printed recommendations from the gentry. As late as July, 1830, Sir Anthony Carlisle allowed such a letter from him to be printed in favour of Lockyer's Pure Magnesia.[1]

"Dr." Willich,[1] who claimed to be "late Physician to the Saxon Ambassador at the Court of Great Britain," struck on a particularly safe source of income at a time of great colonial expansion and naval activity in foreign waters. Although his was a highly specialized appeal to a limited group of people, yet he could be confident that no one in whom his treatment failed would ever return to disillusion other travellers. He was prepared to protect anyone from yellow fever for a guinea, supplying them with a remedy without which they would be "ill-advised to set out for the West Indies or any other Parts of the World."

"Dr." Graham,[1] however, had enough confidence in his nostrums' effectiveness, or at least in their lack of harmful effects, to give public lectures about them. The course was advertised as a series of talks on health (admission one shilling), given by the doctor at his apartments in Capel Court behind the Exchange, his bills repeatedly announcing "Positively The Last Night But One." His trump card was the case of a Mrs. Cartwright, whom he claimed to have restored to health "after she was given over by her Sur-

5 Act of Parliament, 12 George II, cap. 23 [1739], "for providing a Reward to Johanna Stephens, upon a proper Discovery to be made by her for the Use of the Publick, of Medicines prepared by her for the Cure of the Stone."

geon, Apothecary, and Sir John Elliot, the Prince of Wales' Physician and after she was left to be laid out as a dead corpse."

From such a company it was difficult to distinguish the honest apothecaries, conscientiously dispensing their own medicines and conducting a strictly ethical practice from a respectable address. But there were enough men like Mr. John Hayman[1] of Golden Square, with his moderate advertising and restrained claims, to establish in time a status for the general practitioner, and at the close of the eighteenth century the public was beginning to distinguish clearly between the honest man and the charlatan: the quacks were now becoming an object of contempt. The lampoons and cartoons ridiculing their claims reached a spate, and by the mid-nineteenth century they were the butt of many popular songs. No longer could a mountebank practise medicine and surgery, trade as a pharmacist, advise on fruit pests, and act as a veterinary surgeon: the dancing hare with its tambourine,[6] the dwarf, the monkey, and the piebald mare no longer announced the arrival of the quack. The growth of medical knowledge and of a less gullible public opinion compelled him to adopt a more scientific approach. He could still flourish, but he must now be heavily disguised. The Victorian sense of respectability made its contribution to his decline and, as he passed into obscurity, the red lamp of the surgery began to glow reassuringly in every village street.

I acknowledge with grateful thanks the assistance which I have received from the Wellcome Historical Medical Museum, to whose Director, Dr. E. Ashworth Underwood, I am indebted for the illustrations, and from Mr. F. Bond, F.S.A., Record Office, House of Lords.

6 Wilton Psalter. M.S. 1237-50. Salisbury School. Royal College of Physicians of London. This hare is the subject of one of the illuminated miniatures.

Andreas Vesalius, Count Palatine

Further Information on Vesalius and his Ancestors[1]

CHARLES D. O'MALLEY*

IN a list of the household of Charles V, drawn up in June 1556,[2] there are mentioned among the *Gentileshombres de la cámara, El doctor Cornelio* [van Baersdorp], *médico de cámara* and *El doctor Vesalio, médico de familia.* The fact that only these two physicians of the emperor's medical staff are included in an otherwise noble group comprised of such distinguished personages as the Prince of Orange is hardly to be explained by imperial recognition of the great abilities of the two physicians, especially since in the case of Baersdorp no unusual merit was ever demonstrated. In that age of great social distinctions it was of greater likelihood that the descent of Baersdorp from a noble family and, more particularly, the fact that by imperial charter he had been created a count Palatine in the preceding month[3] had been responsible. Vesalius, too, had been elevated to the same rank in April 1556, a reward for more than a decade of faithful service to the emperor and also, perhaps, the explanation for his inclusion among the *Gentileshombres.*[4] Whatever the case may be, the grant by which Vesalius was ennobled,[5] in the fashion usual to such charters, recalls something of the career of the recipient of the title, and in this instance presents us with a fairly clear statement regarding the medical activities of four generations of the ancestors of Andreas Vesalius.

In his *Epistola de radice china* Vesalius recounts that in the year 1546 he had been ordered to drop out of the imperial retinue, then proceeding to Ratisbon for the meeting to the Diet, to attend the Venetian ambassador. The ambassador, Bernardo Na-

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2 *Relacion de los criados que el Emperador neustro senor . . . tenia al tiempo que deshizo su casa, por el mes de junio de 1556 años,* reproduced in L. P. Gachard, *Retraite et mort de Charles-Quint au monastère de Yuste,* II (Brussels, 1855), pp. 71-80.

3 De Meyer, "Notice sur Corneille van Baersdorp," *Ann. Soc. méd.-chir., Bruges,* 1845, *6,* 17-57.

4 It was a reward, however, which cost the emperor nothing and which he robbed of any real distinction by his over-generous distribution of it, cf. the years 1555 and 1556 in Lothar Gross, *Die Reichsregisterbücher Kaiser Karls V* (Vienna, 1930).

5 The charter is to be found in the Oesterreichisches Staatsarchiv, Reichsregister Karl V, vol. 22, fol. 272v-279r. It was brought to the attention of the present writer and photographs of it sent through the kindness of Dr. Gebhard Rath, Oberstaatsarchivar.

vagero, an old friend from Paduan days,[6] had, by reason of illness, been unable to continue beyond Nimwegen, and as a result of this enforced delay of about two months' duration, Vesalius apparently found the opportunity for a side trip, of which he wrote: "I was able to observe the tombs of the Witincx family in the very ancient and renowned Wesel in Cleves, whence they originated, and I found the recollection of these ancestors of mine to be a very pleasing and sacred memory." As a result of such musing he then presents the reader with an account of his ancestors insofar as they were known to him:

> Not infrequently I have heard my father, of pious memory, say that [grandfather] Everard, although he died before he was thirty-six years old, took my great-grandfather John's post as physician to Mary the wife of the Emperor Maximilian. John lived on for many years, teaching medicine at Louvain in his old age when he was no longer fit for court service. His father Peter had been a physician, as is known from his treatise on the fourth Fen of Avicenna as well as from certain books transcribed for him, which are still in the possession of my mother and which are those familiar to physicians of that time, copied at great—and now unnecessary—expense.[7]

It is readily apparent from this statement that either Vesalius' father was in error in the account which he told to his son or that Vesalius had himself become somewhat forgetful over the course of the years since, although the sequence of names is correct—Peter, John, Everard, and then Vesalius' father, Andries or Andreas—Everard did not predecease his father John and, as will be indicated, John, like his great-grandson, first taught medicine and only thereafter did he enter court service.

In early biographical studies of Andreas Vesalius it was assumed—possibly on the basis of the above statement—that the direct forebears of the anatomist had originated in and taken their name from the Rhenish city of Wesel and that as a result the family was of Rhenish origin. However, it should be noted that in his statement Vesalius is referring not to the family Van Wesel but to the family Witincx with which, it was assumed, it became allied by marriage somewhere toward the close of the fourteenth century.

During the course of the fourteenth and fifteenth centuries the name Wesel or Wesele appears to have been relatively common in the Low Countries, but since during those centuries patronymics were often derived from regions or towns, several of which bore this name, the frequency with which records are found in which

[6] L. P. Gachard, *Trois années de l'histoire de Charles-Quint (1543-1546) d'après les dépêches de l'ambassadeur vénitien Bernardo Navagero* (Brussels, 1865), p. 127. Vesalius was at Nimwegen during February and March.

[7] *Opera omnia* (Leyden, 1725), II, p. 681.

there is mention of someone bearing the name Wesel is no cause for astonishment. The first serious effort to investigate the origins of the ancestors of Andreas Vesalius was made by Alphonse Wauters, Belgian archeologist and historian of the city of Brussels.[8] According to Wauters there is record in 1370 of a Jean Van Wesele; other records of 1415 and 1437 mention Elisabeth Van Wesele; one of 1442, another Jean Van Wesele; and a document without date speaks of Gualther Van Wesele.[9] We may add still others from the matriculation lists of the University of Louvain: in 1429, Johannes de Wesalia[10]; in 1432, Guilhelmus de Wesalia alias de Sombeke, diocese of Cambrai[11]; in 1433, Heinricus de Wesalia, diocese of St. Omer,[12] and Johannes Fabri de Wesalia, diocese of Cologne[13]; in 1445, Everardus de Wesalia, diocese of Liège[14]; in 1453 or later, Theodoricus Bruin de Wesalia, diocese of Cologne.[15]

While at least one of these persons can be demonstrated to have been a direct ancestor of Andreas Vesalius, in the other instances it is impossible to say whether or not there was any relationship. Indeed, the geographical distribution of origins mentioned in the matriculation lists clearly indicates the source of the name in various towns rather than from a common family. However, thanks to the archeological efforts of Alphonse Wauters, while the possible Rhenish origin of the family Wesel could not be completely denied, nevertheless no little doubt was cast upon it, and it was stated with considerable assurance that at least as far back as the great-grandfather of the anatomist the family was Brabantine.

Wauters demonstrated that in the province of Anvers, and more precisely in that district known as the Campine, there are two villages called s'Gravenwesel, or Wesel of the counts, and Wuestwesel, or Wesel the arid or infertile, either of which might have been the source of the family name. As to the second surname which the family came to carry, that is, Witincx, and which Vesalius has mentioned above, it could, according to Wauters, have been the result of a marriage alliance. There is a document of the year 1485 by which the children of John Van Wesel and his first wife, Mathilde Van Ellick, sold all the goods which they possessed in the country of Cleves and which they had inherited

8 "Quelques mots sur André Vésale," *Mém. Acad. roy. Belg.*, 1897, 57.
9 *Ibid.*, p. 9.
10 *Matricule de l'Université de Louvain*, ed. Reusens, I (Brussels, 1903), p. 98.
11 *Ibid.*, p. 51.
12 *Ibid.*, p. 71.
13 *Ibid.*, p. 127.
14 *Ibid.*, p. 40
15 *Ibid.*, pp. 236-37.

from their elder brother Everard. It is the assumption of Wauters that these goods represented a maternal heritage and that the mother Mathilde either herself carried the surname Witincx or that it was inherited from her mother.[16] Here, however, we must now temper Wauters' remarks by the information given in our charter: "Peter, born of the family of Witincx of [Rhenish] Wesel." In other words, as far back as Vesalius' great-great-grandfather the family was Rhenish.

If we move from these somewhat hypothetical conclusions to the more certain evidence to be found in Vesalius' own statement, we note that the earliest mentioned direct ancestor was Peter Witincx, great-great-grandfather of the later anatomist, a physician of repute who had written a treatise on the fourth Fen of Avicenna and that certain of his manuscript medical books were in the possession of Vesalius' mother. Now we may add from the information in our charter that Peter was physician to the Emperor Frederick III, and thus this amazing tradition of medical attendance upon the Hapsburgs by the Witincx-Van Wesel family has been further extended. Frederick, although a particularly inept emperor, had a very long reign from 1440 to 1493. We know nothing of the lifespan of Peter nor do we have any information as to when he was an imperial physician. Nevertheless, in view of the family tradition of continual service to the Hapsburgs as well as our somewhat more precise knowledge of Peter's son John and his chronology, it is much more likely that he served the emperor during the latter part of his reign.

On the basis of available information, John, the great-grandfather of Andreas Vesalius, was the most distinguished member of the family prior to the anatomist. He it was, according to our charter, who first used the name de Wesalia. This suggests that he, too, was a member of the Witincx family and therefore the name which he came to employ in Louvain identified him as from Rhenish Wesel. It was also to this John or Johannes de Wesalia that the insignia of the three weasels was officially granted by the Emperor Frederick. Under these considerations it is necessary to question Wauters' assertion that John was definitely Brabantine; rather, according to our evidence, he became Brabantine by residence. Our first record of him is to be found in the matriculation list of the University of Louvain for 1429, that is, three years after the opening of that university. However, he is recorded as *Doctor*

16 Wauters, *op. cit.*, pp. 8-9.

Johannes de Wesalia, doctor in medicinis,[17] thus suggesting that he was a mature man who had already attended and obtained his degree at some other university, which, of course, was necessary for any Netherlander, or, as in the case of John, one from the region of the lower Rhine valley, prior to the opening of the University of Louvain in 1426. Thereafter there is frequent mention of him in the *Acta* of the university.

At the opening of the University of Louvain in 1426 the professor of medicine was Jan van der Neel of Breda. In 1428 an assistant was added to the medical faculty, named Henri die Coster, or d'Oisterwyk, and thereafter when Neel took a leave of absence in 1430-1431, d'Oisterwyk was temporarily in charge of medical teaching with, in turn, the assistance of Johannes de Wesalia.[18] However, d'Oisterwyk appears to have been an unsuccessful teacher, and with the return of Neel he was apparently dropped from the faculty of medicine in favor of Johannes de Wesalia whose success over the years can be gauged from the gradual increase of his stipend and his eventual achievement of what might be termed the chairmanship of the medical faculty.[19] His title was *medicinae doctor et professor.* At the request of the magistracy of Louvain which wished to have a course in "mathematics," Johannes de Wesalia, who was recognized as having some skill in that discipline—recalled in the charter—was offered the "mathematical" lecture by the faculty of arts in 1431. During this time he held a secondary position in the faculty of medicine, receiving a relatively small quarterly salary of 15 Rhenish florins.[20] Apparently, however, he decided that his future lay in medicine, and therefore he declined the alternate position.[21] At the close of August 1430 he was elected *rector trimestriel,* that is, rector for a period of three months, in accordance with the early practice at Louvain.[22] He was elected for a second time in 1433,[23] and a third time on 29 November 1438.[24]

Throughout the *Acta* there are frequent mentions of Johannes de Wesalia as a representative of the medical faculty on various committees for the election of the rector, as a judge in cases re-

17 *Matricule,* I, p. 98.

18 E. Reusens, *Documents relatifs à l'histoire de l'Université de Louvain,* II, pt. I (Louvain, 1903), pp. 7-21, 191, 193-96.

19 *Ibid.,* pp. 28-85.

20 *Ibid.,* pp. 27, 235.

21 *Ibid.,* p. 236.

22 *Actes ou Procès-verbaux des séances tenues par le conseil de l'Université de Louvain,* ed. Reusens, I (Brussels, 1903), p. 26.

23 *Ibid.,* p. 115.

24 *Ibid.,* p. 345.

quiring disciplinary action within the university, and as a deputy of the university in various negotiations between the university and the civic government of Louvain. In the full session of the faculty, 25 February 1437, Johannes de Wesalia and Jan van der Neel are recorded as having appealed to the university for warnings and citations against students for non-payment of fees,[25] and in 1446 there began a long-drawn-out contest between Johannes de Wesalia and Ludovicus de Dienst for possession of the chair of medicine.

In 1443, at some time after 31 May, the last reference to him in the *Acta* of that year,[26] Johannes de Wesalia absented himself from the university and allowed a certain Ludovicus de Dienst (Louis de Vettre de Dienst, d.1460) to act as his substitute.[27] Why or for exactly how long Johannes de Wesalia was absent from the university is unknown. The first mention of him after his return is 26 February 1446.[28] Thereafter, in the general session of the faculty 31 May 1446:

> Johannes de Wesalia doctor in medicine explained in what way Master Ludovicus was appointed in the year 1443 to maintain and administer the lectureship in ordinary in medicine . . . in the name of and in the place of Master Johannes until the return of the same Master Johannes and how the same Ludovicus had promised . . . to yield and hand over immediately the said lectureship in ordinary . . . as soon as the same Master Johannes should return and make the request; and how he had already requested many times that [Ludovicus] should yield but he has not yet done so to the grave prejudice of the honor and prestige of the said Master Johannes.[29]

Hence Johannes requested the faculty to employ its disciplinary power to remove Ludovicus as the usurper of his lectureship. In his defence Ludovicus replied that while he had been appointed temporarily to the chair, nevertheless he had been appointed by the then burgomaster Jocobus Utenlyemingen with the promise that upon the return of Johannes, Ludovicus would be rewarded with a prebend; that although he recognized the position of Johannes de Wesalia and that he was obligated to him for many things, yet, in brief, he could not relinquish the chair until he had received the compensation promised to him.

[25] *Ibid.*, p. 289.

[26] *Ibid.*, p. 457.

[27] This Ludovicus matriculated at Louvain in 1427, was promoted licentiate in arts in 1431, and thereafter became regent of the faculty of arts and applied himself to the study of medicine. In 1442 he became M.D. and thus qualified to teach in the medical faculty, *Ibid.*, p. 319n.

[28] *Actes*, ed. Van Hove, II (Brussels, 1919), p. 19.

[29] *Ibid.*, II, p. 31.

In the usual manner in such cases, the rector of the university appointed a committee to investigate the problem and on 2 June 1446 it rendered its decision to the effect that the chair should be vacated on behalf of Johannes, but in recognition of the claims of Ludovicus, Johannes must pay him "twenty to twenty-six" florins within eight days.[30] Thereafter, the case continued with appeals from both sides[31] until, in the general session of the faculty, 7 March 1447, with Johannes condemned finally to pay, the rector, in accordance with a perquisite of his office, laid claim to one-third of the sum.[32]

Wauters has demonstrated from the archival records of Brussels that Johannes de Wesalia became city physician of Brussels; and while no evidence for the year of this appointment has been discovered, yet the fact that the last record of him to be found in the university *Acta* is dated 1447 suggests that his appointment was no earlier than that year. A further document of 1471 concerned with a decrease in the city expenses and a reduction in the stipend of the city physician indicates his employment at least until that date,[33] although it may have caused him to shift his services to the House of Burgundy. However, if our charter is literally correct, since he is mentioned as physician to Duke Charles "for a long time," it could not have been prior to 1467 when Charles inherited the ducal title. If this is the case, the phrase "for a long time" could mean at the most only 1467 to 1476, the year in which Johannes died.

Johannes or John de Wesalia was twice married. His first marriage to Mathilde Van Ellick, previously mentioned, resulted in the birth of four children, Everard, Jeanne, Henry, and Paul. Two other children, Agnes and Barbe, were the result of a second marriage to Agnes Swarts or Sweerts, who survived her husband and thereafter married John, son of Nicolas De Costere, 21 May 1477. John de Wesalia died 28 May 1476, contrary to the statement of Andreas Vesalius given above, since his death occurred before that of his son Everard.[34] A second statement of Vesalius which has been called in doubt concerns the service of John de Wesalia as physician to "Mary [of Burgundy] wife of the Emperor Maximilian." Actually Mary's father, Charles the Bold, did not die until the

30 *Ibid.*, II, pp. 31-2.
31 *Ibid.*, II, pp. 33-4, 35, 53-4, 56, 61.
32 *Ibid.*, II, p. 68.
33 Wauters, *op. cit.*, p. 11.
34 *Ibid.*, p. 13.

year after the death of John and prior to Mary's marriage to Maximilian, but it is quite likely that John as physician to the duke would also render his services to the duke's daughter, although, of course, she was not at that time "the wife of the Emperor Maximilian."

In the course of his life John succeeded in acquiring a considerable fortune, possibly the source of the well-being of the later generations of the family which seem never to have suffered any financial exigencies. John eventually acquired the manor of Ter-Holst at Over-Yssche as a fief held from the duchy of Brabant, gained by purchase 31 October 1464, from Jean Van den Bossche, called Van der Holst. Several years later he acquired a seigniory at Vieil-Héverlé and the water mill near Vaelbeke with its banal rights. Later these properties as well as those of the Witincx family in Cleves went to the sons of the first marriage of John with Mathilde Van Ellick.[35]

Of John's children, the eldest was Everard. It is difficult to reconcile the Everard de Wesalia who matriculated at the University of Louvain in 1445 with the son of John de Wesalia because of the problems of chronology. Since we know that our Everard died c.1485 and that matriculating students were frequently about fifteen years old, he would then have lived to be far older than the age allowed him by Vesalius and about ten years older than Wauters proposes. Whatever the case may be, our Everard was termed by Molanus a doctor of medicine and a soldier, and without citing the year he states that Everard died "quarto kal. Augusti" and lay buried near the altar of the Trinity in the collegiate church of St. Pierre in Louvain.[36] Since we have record that after his death his brothers and sister fell heir to his property in Cleves, his death was anterior to the date of that document, 19 July 1485.[37] There is evidence that he had already received his medical degree by 1461 since in that year he was paid a sum of money for his medical services rendered, and we must deny Vesalius' statement, as previously mentioned, that he died scarcely thirty-six years old and prior to his father. Wauters suggests a misprint for forty-six.

Everard was physician to the Archduke Maximilian, who had become regent of the Low Countries by reason of his marriage

35 *Ibid.*, pp. 12-13.
36 *Historiae Lovaniensium libri XIV*, ed. P. F. X. Ram, I (Brussels, 1861), p. 560.
37 Wauters, *op. cit.*, p. 9.

with Mary of Burgundy, and, according to our charter, to Mary, who died in 1482; he was also physician to their children, Philip, later the father of Charles V, and Margaret. It may well have been, as Vesalius wrote, that he "took my great-grandfather's post as physician to Mary, the wife of the Emperor [then Archduke] Maximilian." If the charter is correct in calling Everard physician to Margaret of Austria, it could have been only during the first several years of her life since she was born in 1480 and he was dead by July 1485. Moreover, there seems little reason not to accept Vesalius' further statement: "I have his learned commentary on the books of Rhazes in addition to his commentaries on the first four sections of the aphorisms of Hippocrates and some mathematical works, which attest him to have been a man of singular ability." Everard was eventually advanced to the rank of knight,[38] but did not live to enjoy this honor for any great length of time.

Of the brothers of Everard, Paul is to be found on the matriculation list of Louvain for 29 August 1469 as "Paulus Wijtinc de Wesalia, diocese of Cambrai," and undertaking the arts course in the College of the Lily. Eventually he became M.A.[39] Little more is known of him except that he became affianced to Barbe Most in the church of Sainte-Gulde in Brussels, 30 October 1488.[40]

Somewhat more is known of Henry who matriculated at Louvain 20 August 1465, identified as of the diocese of Liège and who also entered the College of the Lily.[41] Henry was apparently the man of business. It was he who on behalf of himself and the other children of the deceased father John sold the manor of Ter-Holst to a certain Frederick Baers 26 July 1478; and as secretary of the town of Vilvorde his name is to be found signed to a number of documents toward the close of the fifteenth century. He died 12 October 1525 after having been married twice, first to Ode Simoens, still alive in 1478, then to Marguerite de Ritar, who lived until 25 August 1537 and who was then buried near her husband in the church of Vilvorde.[42]

Little is known of the sisters. Jeanne, the eldest, married Roland T'Serants and took possession with him of a seigneurie at Corbeek-Dyle, near Louvain (9 August 1456). Her husband was

38 *Ibid.*, p. 14.
39 *Matricule*, II, p. 221.
40 Wauters, *op. cit.*, p. 14.
41 *Matricule*, ed. Jos. Wils, II (Brussels, 1946), p. 155.
42 Wauters, *op. cit.*, pp. 14-15.

mayor of Brussels in 1488 during the civil war which was then ravaging the country. The cities of Brabant in general opposed Maximilian, who was then governing the territory in the name of his son Philip the Handsome, but Henry Van Wesel remained faithful. As a result, the archduke handed over to Henry the goods of the T'Serants which had been declared confiscated but which Henry returned to their owners after the declaration of peace in 1489. The other daughters of John de Wesalia were Agnes and Barbe. A Barbe Wytincx, wife of Jean de Mabeert, is mentioned in a document of 23 October 1530. There is no further knowledge of Agnes, nor is there any regarding the relationship of an Adolphe Wytincx called Van Wesel, who was affianced to a Marguerite Serclaeus in the church of Sainte-Gudule, 30 August 1497, nor of a goldsmith, Everard Wytincx called Van Wesele, mentioned at the same time.[43]

Approaching one generation closer to Andreas Vesalius of Brussels, we meet his father, Andries Van Wesel, the son of Everard. There is no mention of him hitherto in any of the family documents, and this is easily explained by the fact of his illegitimate birth. Moreover, and probably related to this situation, his imperial service was of a more humble sort than that of his illustrious predecessors, and it was to be left to his son, the famous Andreas Vesalius, to restore the tradition in its complete form.

Translation of Charter Creating Vesalius a Count Palatine

[Count] Palatine with ennoblement and establishment of arms, personal immunity from the law of cities, by Imperial law, recognition, and safe-conduct, on behalf of Andreas Vesalius, Imperial Physician to his Imperial Majesty, Charles.

Charles the Fifth, Emperor, to the illustrious, distinguished, learned, faithful, and cherished Andreas Vesalius, doctor of arts and of medicine, Count of the Sacred Lateran Palace and of our Sovereign Court and Imperial Consistory, our Sovereign Grace, and all good. When almost all the celebrity and excellence of some active and outstanding man has passed on to his posterity, and therefore his descendants have been set apart from the multitude and held in a kind of special respect, we believe that that family, which draws its dignity and lustre not only from his worthiness but also has its origin in the excellence and worthiness of its many members, ought finally to be recognized as noble. And so we have considered the reputation of your forebears and family and the singular skill in medicine of your ancestors, especially in relation to our predecessors and forebears, the Em-

[43] *Ibid.*, p. 15.

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perors Frederick and Maximilian, and Charles, Duke of Burgundy, great-grandfathers and grandfather of pious and happy memory,[44] the care of whose health was committed to their faithful and devoted zeal. For your great-great-grandfather Peter, born of the family of Witincx of [Rhenish] Wesel, was physician of our great-grandfather, the Emperor Frederick; for a long time your great-grandfather John, of our forebear Charles, Duke of Burgundy; and also your distinguished grandfather Everard, of the late Margaret, August Infanta and Duchess of Burgundy, born of our paternal grandfather and predecessor, the Emperor Maximilian, as well as [physician] of our grandmother, his wife, and their children.[45] Furthermore, the works on astronomy and medicine of your aforesaid great-grandfather John Vesalius, published for the general usefulness of students, are still widely employed and of great literary merit.[46] But (though not forgetting your father, who for more than thirty years was away from his urban home and pharmacy, nor his excellent knowledge, pleasing and trustworthy to us,

[44] Regarding the somewhat intricate relationships of these ancestors "of pious and happy memory," Frederick III of Hapsburg was Holy Roman Emperor 1440-1493, a man of little merit either political or intellectual, and hardly master in his own Hapsburg domain. Indeed, what he was able to hand on to the next emperor, his son Maximilian, was less than he had controlled during the earlier part of his reign. Thus the outlook for Maximilian, "the last of the knights," was hardly encouraging until the Hapsburg fate became involved with that of Burgundy. It is for this reason, as well as because it was Charles V's birthplace, that we find the phrase "Burgundy our distinguished home" in the charter. In 1467 Charles the Bold became Duke of Burgundy and, carrying forward the work of his father Philip, proceeded to unite to Burgundy territories then neither peculiarly French nor German such as Lorraine, the Netherlands and the Upper Rhine. During his efforts to acquire this last area he was killed outside the city of Nancy in 1477 and left as his heir and only daughter, Mary, young, frightened, and a prey not only to internal forces of hostility but particularly to the arch-foe Louis XI, King of France. It was under these conditions that she accepted marriage with the young Archduke Maximilian and thereby not only joined the houses of Burgundy and Hapsburg, but also moved the Hapsburg and imperial interests back into northern and western Europe where there had now been gained the immensely wealthy Burgundian heritage, and in particular the Netherlands. This marriage produced two children, Philip in 1478 and Margaret, who is mentioned in the charter, in 1480. In 1496 Philip married Joanna, daughter of Ferdinand and Isabella of Spain, and it was the second child of this marriage, Charles, born in 1500, who became the heir to the three lands, Burgundy, the Hapsburg territories, and Spain, thereafter to be comprised in one vast and unwieldy empire.

[45] Wauters, *op. cit.*, p. 13, mentions a pension received by Everard from Maximilian, which is recorded in the *Livres noirs* in the Archives Royales in Brussels. Curiously, while the charter mentions by name Charles' ancestors on both sides, his grandparents and one of their children, his aunt Margaret, yet the other child, his father Philip, is never mentioned by name or any other individual connotation but merely comprised in the phrase "their children."

[46] Cf. *supra* the invitation extended to Johannes de Wesalia by the Faculty of Arts at Louvain to give the lectures on "mathematics." The reference in the charter may be to his work *Exhortatio super calendarii correctione*, addressed to Pope Eugene IV and thus composed somewhere within that pontiff's reign, 1431-1437. The manuscript, although preserved for some time in the monastery of Groenendael, had disappeared by the time that Molanus composed his history of Louvain, *op. cit.*, p. 560. Wauters has called attention to a second work, a manuscript of the fifteenth century signed *Per Johannem de Wesalia*, which he terms "probably autograph," purchased at auction in 1864 and now in the city archives in Brussels. Entitled merely *Antiquiteyten* (Antiquities), it contains observations presented to a "very illustrious prince"—possibly the Duke of Burgundy—regarding the appearance of a comet in the constellation of Pisces, astrological rather than astronomical in character (Wauters, *op. cit.* pp. 11-12).

to the Holy Roman Empire, and to Burgundy our distinguished home)[47] let us consider you first of all, Andreas, and your singular position and industry, your great probity and candor and, because of your many other gifts of fortune and capacity, your exceptional knowledge and acquaintance with sacred and natural philosophy, not only teaching medicine at Padua for six years[48] in the paid service of the Venetians, but also anatomy which was then wholly neglected. Now, however, by your efforts and zeal for physicians, by hitherto unheard-of industry, skilfullness, wisdom, and diligence, and by the greatest expense and various and unrestrained efforts at Paris, Louvain, Padua, Bologna, and Pisa,[49] and by the employment of public dissections of human bodies, and the publication many years ago of your volume *De humani corporis fabrica,* of such erudition, very true judgment, talent, and industry, and so elaborated [it is clear] that hitherto nothing has been composed so eloquent, learned, and useful. It is easily and without question the greatest of all books which have been written about anatomy, and celebrated for its illustrations, so that, as you have witnessed clearly, all students of medicine and the most distinguished professors and famous physicians acknowledge a very great debt to you. When you pre-

[47] Andries or Andreas Van Wesel was the illegitimate son of Everard and Marguerite s'Winters, and it was in return for the faithful service which he had rendered the emperor that he was legitimized in October 1531 in an act granted by Charles V (Wauters, *op. cit.*, pp. 51-3), and thus some seventeen years after the birth of his illustrious son. Very little is known about him, and we are unaware of the dates of his birth and death. He is mentioned by Vesalius in the preface (1542) to the *Fabrica* as still serving the emperor, but in the *Epistola de radice china* (1546) he is a "pious memory." Since the charter speaks of more than thirty years of service, he must have entered the imperial service at least as early as 1515, and he is said to have served earlier as pharmacist to Margaret of Austria. He married Isabel, the daughter of Jacques Crabbe, and despite occasional assertations that Isabel Crabbe was English—possibly from recollection of the English poet of that name—the family was very certainly Brabantine. Divaeus mentions the family with its arms in his seventh classification of families of Louvain (Petri Divaei . . . *rerum Lovaniensium,* etc. [Louvain, 1757], p. 96). As a dowry for his daughter, Jacques Crabbe provided the house in which the young couple established their home (Wauters, *op. cit.*, p. 18), and it was there that their four children, of whom Andreas was the second, were born. However, as the charter indicates, much of the imperial pharmacist's time was spent away from his home and family in Brussels. We have evidence of a sojourn in Valladolid in 1517 (M. Roth, *Andreas Vesalius Bruxellensis* [Berlin, 1892], p. 60), and in 1521 he was in Mainz (Jean Vandernesse, *Journal des voyages de Charles-Quint,* in *Collection des voyages des souverains des Pays-Bas,* ed. M. Gachard, II [Brussels, 1874], p. 508). The fact that it was Vesalius' mother who obtained the imperial privilege for the *Fabrica* in 1542 (Prefatory letter to Oporinus), suggests that the father was again away from home, possibly in Spain with the emperor. We do not know where he received such training as was necessary for his profession. While it was presumably the most that an illegitimate son could expect and permitted him to continue the Witincx-Van Wesel tradition of imperial medical service, yet his contribution was certainly not on the same plane as that of his ancestors whom, as his son tells us, he frequently recalled. It appears likely that this as well as his illegitimate origin determined him to make certain of his son's medical education, and, if possible, to pave the way for young Andreas' entrance into the traditional imperial service. So it was that he took advantage of his position at court to present the emperor with his son's *Tabulae anatomicae* in 1538.

[48] Since Vesalius did not receive his degree at Padua until December 1537 and since the records indicate that his salary was paid in 1543 (Roth, *op. cit.*, pp. 425-31), the "six years" refers to the period 1538-1543.

[49] Paris, 1533?-1536; Louvain, 1536-1537; Padua, 1537-1543; Bologna, during 1539?, 1540?, and a "one-night stand" in the winter of 1543; Pisa, January-March, 1544.

sented that same volume to us[50] when we were setting out for the campaign in Guelders,[51] you won us easily by your abilities so that we enrolled you as our *medicus familiaris ordinarius*,[52] and on all occasions in war as well as in

[50] The reference here is to the *Fabrica*. It has several times been pointed out that a copy of the *Epitome* on vellum, which was one of the treasures of the library of the University of Louvain until its destruction in 1914, was the book presented to the emperor. Yet if we consider that the *Epitome* was dedicated to Prince Philip and that the use of vellum for the *Fabrica* would have been extremely expensive, it is more likely that Vesalius presented the emperor with both a copy of the *Fabrica*, which carried a dedication to him, and as well a copy of the *Epitome* on vellum. If one considers the dedications of his other books, it is apparent that they were always dedicated to persons who might thereafter be able to assist Vesalius, and in view of the emperor's frequently precarious health and the ultimate succession of Philip, the reason for the dedication of the *Epitome* is obvious. It may be added that the significance of the vellum copy is somewhat lost if we consider that in addition to the Louvain copy there is record of three other copies on vellum (W. G. Spencer, "The 'Epitome' of Vesalius on vellum in the British Museum Library," *Essays on the history of medicine presented to Karl Sudhoff* [Zurich, 1924], pp. 237-44; Hernani Monteiro, "A copy on vellum of the 'Epitome' of Vesalius in the library of the Escorial," *Festschrift zum 80. Geburtstag Max Neuburgers* [Vienna, 1948], pp. 346-49; Harvey Cushing, *A bio-bibliography of Andreas Vesalius* [New York, 1943], p. 112). The *Fabrica* despite the date of its colophon, was not ready for distribution until 1 August 1543. Vesalius, however, did not leave Basel until 4 August, having remained to act as godfather for a child of the printer Robert Winter. If thereafter he proceeded to the imperial court to make the presentation of his books, it is most likely that this event occurred at Mainz, since the emperor reached that city from Oppenheim on 7 August and remained there until 12 August (Vandernesse, *op. cit.*, p. 259).

[51] The campaign in Guelders was the result of a long-standing and complicated situation. On the death of the Duke of Guelders in 1538, the estates of that territory, in defiance of an existing treaty which had secured the reversion of Guelders to the emperor, had chosen Duke William of Cleves as their lord. Thereafter in 1540 Francis I had entered into alliance with the Duke of Cleves, to whom he already had ties through the marriage of the duke to Jeanne d'Albret. The result was a threat to the Netherlands in view of the impending struggle between Francis and Charles. Still further complications resulted from the close relations which existed between the duke and the Protestant princes of the Schmalkald League. The threatening war broke out in July 1542 while Charles was in Spain, and for a time Luxemburg was lost and the Netherlands greatly imperilled. Yet what had appeared as a great threat suddenly disappeared with the stalling and thereafter the withdrawal of the French armies for reasons never fully explained. As a result the imperialists were able to plan for a punitive campaign against the Duke of Cleves as well as the recovery of Guelders. At the close of 1542 Charles left Spain, going first to Italy where he remained for some time seeking papal support for his plans, and reached Germany at the opening of August. Thence with an imperial army he brought about the defeat of the duke—as it turned out not a particularly heroic character—and the recovery of Guelders in August and September (Karl Brandi, *Kaiser Karl V* [Munich, 1941], pp. 405-15, 425-32). Vesalius appears not only to have become an imperial physician but presumably took part in the campaign as a military surgeon (*Epistola de radice china*, in *Opera omnia* [Leyden, 1725], II, p. 674), "the war in Guelders from which I again returned into Italy," went to Padua where he discomfitted his erstwhile assistant Realdus Columbus, settled his affairs, continued on to Bologna, thence to Pisa where he lectured on anatomy during the winter of 1543-1544 (Andrea Corsini, *Andrea Vesalio nello studio di Pisa* [Siena, 1915]; "Nuovi documenti riguardanti Andrea Vesalio e Realdo Colombo nello studio pisano," *Riv. Storia Sci. med. nat.*, 1918, *9*, pp. 507-12), and thereafter returned to fill his new imperial position and to serve in the imperial forces in the new war which had broken out with the French.

[52] Vesalius' official position may be translated as "regular physician to the household" which contrasts with that of Cornelius van Baersdorp who had also taken imperial service in the same year as Vesalius (De Meyer, *op. cit.*, p. 35). Although Baersdorp's precise title is not given in his charter of ennoblement, yet in the list of the imperial household given above, his title is such that it may be translated as "personal physician to the emperor," officially superior to that of Vesalius and leading Baersdorp to aspire to the position of archiator in 1551 upon the death of Narciso Vertunno (Fausto Nicolini, "New light on the Neapolitan physician Narciso Vertunno," *J. Hist. Med.*, 1946, *1*, 335-37; *Lettres . . . ecrites par Guillaume van Male*, ed. Reiffenberg [Brussels, 1843], p. 84); however, by reason of imperial political and financial considerations he was disappointed in his hope. Apparently protocol required that by reason of his title Baersdorp remain im-

peace, in many and very difficult journeys and our continual suffering,[53] you clearly displayed to us such examples of your trustworthiness, industry, abilities, judgment, and authority that even if much distinction and honor has come to you from your ancestors, yet no more than is proper to your abilities, and so, influenced by these reasons we may seem to be negligent of your many ancestors and their merits because you display the merits of your own ability. In our name and in that of the Holy Roman Empire and of others, we pronounce, and as Emperor we grant to you in all our other places and lands,[54] that we make, create, confirm, and elevate the aforesaid Andreas Vesalius and his legitimate children of each sex, born as well as to be born, and their legitimate heirs and descendants in perpetuity to be nobles by birth, with the rights of tournament, and of the grade, order, and titles of nobility, and, accordingly, we distinguish them by heraldric insignia, and we create, elevate, raise, and denote you noble above the quality of human condition, and we declare and name you as if begotten of nobility by birth, with right of tournament and from each and all, whatsoever Imperial status and grade, decreeing and, by this Imperial edict of ours, pronouncing that hereafter anywhere in our territories and lands, in courts of justice as well as outside, in things spiritual, temporal, ecclesiastic, and profane, in whatsoever even if such be Imperial, that you are able and ought to use, enjoy, and rejoice in each and all Imperial privileges, honors, dignities, and ceremonies which are of our Holy Roman Empire and of our other kingdoms, provinces, and states in which we have established laws, and thereupon good Imperial nobles of the territories, and in like manner of all other places and lands. Wherefore of the status of this nobility of yours there shines upon you, the aforesaid Andreas Vesalius, and upon your children, heirs and aforesaid descendants, your arms and insignia of gentility handed on by you to your heirs but which in times past [were handed on]

mediately with the emperor as is indicated for the period 1550-1552 in the letters of Van Male (*ibid., passim*). On the contrary, the emperor need not necessarily depend entirely upon Baersdorp, and this made life extremely difficult for the personal physician since the emperor was not averse to resorting to quacks such as Franciscus Caballus, described by Van Male as *O magnum onagrum* (*ibid.*, p. 23). Moreover, the emperor upon occasion tended to place greater confidence in Vesalius as in the spring of 1547 when Vesalius on his way to Basel had to break his journey and hurry back to the imperial bedside despite the attendance of Baersdorp and other physicians (R. Stintzing, *Ulrich Zasius . . . Mit urkundl. Beilagen* [Basel, 1857], pp. 1-3, 5, 12). Later in that same year a letter of the Bishop of Forli indicates that the emperor was again ill and that since the bishop did not rely upon the abilities of Baersdorp he had secretly permitted Vesalius to undertake the care of the imperial patient (*Nuntiaturberichte aus Deutschland, 1533-1559*, X [Berlin, 1907], p. 79. In the case of Vesalius, his title apparently meant that not only was he physician literally to the household but that he might even be detached to attend a member of the imperial entourage, as in the case of Navagero mentioned above.

53 The continual suffering of the emperor was most likely a reference to the frequent attacks of gout which naturally would be especially unpleasant during journeys. Indeed, this particular ailment had so impressed itself upon the imperial mind and memory that the sequence of attacks is recalled as a matter worthy of note in the memoirs which Charles dictated in 1550 (*Mémoires de Charles-Quint*, ed. and trans. Alfred Morel-Fatio [Paris, 1913], p. 187ff).

54 The distinctions are between those lands in the Holy Roman Empire which Charles held and ruled in name only and those lands which he had inherited and ruled in fact, such as the Netherlands and the Kingdom of Spain.

by your aforesaid predecessor and great-grandfather of worthy memory. To your aforesaid great-grandfather John (who when he taught the art of medicine at Louvain among the earliest disciplines presented his name to the students as *de Wesalia* [i.e., from Wesel]—as is the custom there, from his native soil; so he was called, and it is to that circumstance that you his posterity owe your name)[55] at one time the Emperor Frederick the Third had granted arms of black or sable color on which—for obvious reasons—are observed three white or silver weasels[56] *courant*—which in your language are called *belenacula*—placed to the rear and with their heads toward the forward part of your escutcheon. On the escutcheon an open, cancellated, or tournament helmet, adorned with laces or lappets of white or silver, and black, and the markings of the *torteau* of the same colors. On the apex of that helmet between twin, black, outspread wings, weasels of a white or silver color sit forward. Not only ought [the arms] to be praised, approved, and confirmed, but, as well, we have decided that they ought to be praised, established, and approved, and, accordingly, we praise, approve, confirm, grant, and establish, changing the markings of the *torteau* into the royal golden crown, for which the black eagle with both wings outspread and its tail spreading out into the same feathers signifies in what manner or way the Emperor wills and decrees to his people that you are pleasing to the Emperor. Furthermore, in order that you the aforesaid Vesalius may understand our good will and indulgence, by our effort, knowledge, wisdom, and plentitude of power, we have made, created, and elevated you to be Count of the Sacred Lateran Palace and of our Sovereign Court and Imperial Consistory, and we entitle you first of all, Count Palatine, and, accordingly, we make, create, elevate, raise, and designate you in the number and fellowship of our other Counts Palatine, and gladly we add and enroll you, decreeing and by our Imperial edict declaring that from now on you can and are able to use, enjoy, and rejoice in all the privileges, favors, laws, immunities, honors, exemptions, and liberties which the other Counts of the Sacred Lateran Palace have hitherto possessed or possess by custom or right. Giving and conceding to you, the aforesaid Andreas Vesalius, full authority and power throughout the entire Holy Roman Empire and in all its lands to create public notaries, accountants, and judges in ordinary from any persons who are worthy of trust, proper and suitable (with which we charge your conscience), and to grant to them the office of notary, judge, and accountant and to invest them and any of them by written document (as is the custom), with the provision, however, that in the creation of judges in ordinary by you (as is set forth), or whatever the office may be, that you receive in our name and in that of the Holy Roman Empire the necessary

[55] In other words, John Witincx from Wesel. Therefore the first ancestor of Vesalius who was Brabantine by birth was his grandfather Everard.

[56] Thus the appearance of the three weasels on the title-page of the *Fabrica* and Vesalius' reference to "our weasels" are proper references to insignia held by the family through imperial grant rather than any whimsical suggestion of the relationship of his ancestral name Wesel to weasel.

corporeal and special oath of fidelity in this way, that is, that they will be faithful imperialists to us and to the Holy Roman Empire and to all our successors and Emperors and to legitimate kings. We decreeing that all instruments and writings made by notaries created in this way by you, as set forth, may be employed anywhere with full authority notwithstanding constitutions, ordinances, and statutes anywhere to the contrary. Furthermore, to you the aforesaid Andreas Vesalius we concede and grant that you can and are able to legitimize natural, bastard, and illegitimate children, those of incestuous or opposed unions, and any others born or to be born of illicit or condemned union, whatever their state may be, procreated or to be procreated, masculine and feminine, and whether their parents are living or dead (excepting, however, the children of illustrious Princes, Counts, and Barons) and to restore and to return to them and to any of them each and all of their legitimate rights and to remove completely the blemish of their birth, restoring and rehabilitating them in each and all of their rights of succession and inheritance, paternal and maternal, even from an intestate condition of male and female relatives, and to all honors, dignities, and individual legitimate acts, be they from contract or from final testament, or in any other manner, be they by judgment or without, as if they had been born and procreated of legitimate matrimony without any objection of illegitimacy allowed. That their legitimacy be accomplished as above, that they be considered and held as legitimate as if it had been with all the formalities of the law, and in default of which we wish and intend that our Imperial authority be employed, on condition that legitimizations of this sort are not to the prejudice of naturally legitimate children and heirs. That of those to be legitimized, after they have been legitimized as above, that they be considered and regarded and can and are able to be named everywhere as legitimate and legitimate by birth, house, family, and legitimate parents, to become nobles if their parents are nobles, notwithstanding any laws by which it may be objected that natural, bastard, and illegitimate children and those of incestuous or opposed unions, and any others being procreated or procreated of illicit union, cannot nor ought to be legitimized if there are existing naturally legitimate children, or without the consent of the natural [i.e., legitimate] children and of the legitimate relatives or vassals, and especially in the law:*Quibus modis nat: eff: sin per totum,* and section, *Naturales si de feud. fuer: contro: inter do: et agn: at l. inhibemus, cap. de Emancip: lib.,* and in other similar laws, and each of which we wish expressly and from certain knowledge to be derogated, and even notwithstanding any aforesaid disposition of the contracting parties, and the final testament of those defunct, and other laws and statutes, or customs of places, even if they be such that they ought to be expressed and special mention made of them. In this present case, from certain knowledge and in the plenitude of our Imperial power to derogate those things opposing and capable of opposition and wish them to be wholly derogated. Likewise, to you, the aforesaid Vesalius, we give and grant that you can and are able

to confirm, give, and institute administrators and guardians, and for legitimate reasons to remove them, to restore honor to the infamous by law as well as by fact, and to remove all known injury from them, whether penalized or to be so, that they may be considered and rendered proper and suitable to each and all legitimate acts, to adopt and arrogate children and to make, direct, and control those adopted and arrogated. Furthermore, to free legitimate children and those to be legitimized and those adopted, and to free them from paternal power, with or without the consent of their parents, present or absent, and that this may be done through a special administrator, on the part of the parents or of the children; to consent to adoptions, arrogations, and emancipations of all sorts, of children as well as of youths and to grant to supplicants pardon by reason of age, to interpose your authority and decision in all things; to free slaves, and in cases of liberation with or without compensation, to interpose your authority and decision in alienations of minors and transactions for maintenance, and after an adverse party has first been appealed to, to restore minors, churches and injured communities and to grant them as the other party complete restitution, always, however, maintaining legal processes. Then that you may experience still more our clemency and munificence, by our same effort, wisdom, knowledge and authority, we give and grant to you, the aforesaid Andreas Vesalius, that you can and are able each year to make and create and promote two doctors in one or the other law, or in the medical faculty, as well as poets laureate, masters, bachelors, and such officers as you wish, however, employing in whatever creation of doctor or licentiate, at least three doctors in the same faculty, who may through a rigorous examination, judge and approve promotions of this sort as sufficient and suitable, and if they have been found sufficient and suitable, you may give them licence in the same faculty, always observing the usual traditions and customs in *studia generalia,* and in our name and authority to give and confer the doctoral insignia, whether the bonnet, laurel, or staff, and the laurel of the licentiate or master in the same faculty. And, as is set forth, that those promoted or to be promoted by you as doctors, licentiates, poets laureate, masters, and bachelors, in all cities, places, and territories of the Holy Roman Empire and in any of its lands, have the right and are able to exercise all the doctoral acts, of lecturing, teaching, interpreting, commenting, disputing, accepting a chair and whatever other acts there may be which pertain to licentiates, poets laureate, bachelors, and masters, and to enjoy and employ all and each of the privileges, prerogatives, exemptions, liberties, concessions, honors, pre-eminences, favors, indulgences, and services, and whatever other things which doctors, licentiates, poets laureate, masters and bachelors of Paris, Bologna, Padua, Perugia, Pavia, Vienna, Louvain, and in other *studia generalia* elsewhere, or in whatever other manner those promoted and distinguished enjoy and employ some other custom or right, notwithstanding whatever opposition there may be in the laws, decrees, statutes, customs, constitutions, ordinances, reformations, privileges, ex-

emptions, favors, and prerogatives of the aforesaid universities, and of whatever tenor and force they may be, whether made or to be made, by us or our predecessors or successors, or by some or other Princes, Dukes, Marquises, Counts, Communities, Universities or otherwise, of whatever kind or condition, under whatever legal form and expression of words, even if they be such that it is necessary that special word by word mention be made here to the contrary. Wherefore we derogate and desire each and all of them to be derogated insofar as they oppose or might oppose this concession and indulgence of ours in its purpose, authority, and power. Furthermore, that you may more fully realize our favor, we name, make, and establish you and your legitimate children and their descendants in perpetuity, honorable citizens of whatever cities and towns, ours as well as in any jurisdiction in the lands of the Holy Roman Empire, granting you the rights of all cities so that you are able and ought to use, enjoy, and rejoice in the various privileges, benefits, honors, dignities, statutes, decrees, immunities, and exemptions of citizens, and any other rights, acts, pre-eminences, functions, and civil offices of honorable citizens, which other men, royal citizens, Imperial nobles, and the original, honorable, and indigenous citizens of other cities and places of this sort have, use, enjoy, and rejoice in by custom or by right. Furthermore, we yield and grant to you and to your wife, children, and your descendants of both sexes that whenever and however you desire to dwell in any of the cities or towns, either of our jurisdiction or that of the Holy Roman Empire, in the same place or elsewhere throughout the Empire and our hereditary dominions, you and your wife and children and descendants aforesaid, and also domestics and retainers as well as their domestics, are to be considered as rightfully absolved, free, completely immune, and exempt from any and all duties, impositions, royal services, whether mixed, ordinary, or extraordinary, of whatever sort and by whomsoever imposed, or able to be demanded, no matter on whatever authority, dignity, or power it may appear, and also from exactions of tribute, watch, and maintenance of militia, to be relieved from gabelle, donations, pedage, tolls, personal services, imperial services, gifts, summons, and assessment, and security from all duties of council, magistracy, and any other sort, and especially from the quartering of troops, and all others of whatever sort, and from burdens imposed as well as other things imposed for whatever reasons, so that in no way may you be held to any of the aforesaid or are they able to be sought or demanded from you and yours, as above, in any way or form except, perhaps, city real estate or goods in urban places of such sort that, by chance, you may be held to follow the ordinary [civic] laws. And that you are and ought to be free in the aforesaid cities and towns to enter any noble or burgher or other worthy gatherings and congregations of citizens, and whenever it pleases you to withdraw from them and to depart again and set forth from the aforesaid cities or towns with all your goods and possessions, without any interference or hindrance from the magistracy, and betake yourself elsewhere, notwithstanding the laws,

statutes and customs in the aforesaid cities and places anywhere, or other constitutions, ordinances, decrees, prescriptions, and prohibitions, under whatever legal form made or published or to be published by us or our predecessors, and in any other of our faculties of arts, whatsoever, to each and all, from our knowledge and in the plenitude of our power, insofar as they may oppose this our indulgence we derogate and wish it to be derogated on threat of penalty to them, although otherwise [such prohibitions] will remain in force. Furthermore, we concede and grant to you, the aforesaid Vesalius, the right and authority to use the texts and teachings of others as well as your own, of whomsoever and of whatever kind in all books, letters, written instruments closed and patent, and in whatsoever other arts, so that you the aforesaid Vesalius are able to use the above-mentioned privileges very freely. Then because long ago we enrolled you as our *medicus ordinarius,* and then because we have been aware of your constant attendance in our domestic and court household, we have assumed and we accept and assume in perpetuity the constant, special protection, care, and safeguard of your household, with wife, children, and family, your and their goods, present and future, personal and real, estates and possessions lawfully acquired and to be acquired in the Holy Roman Empire and our other principalities and hereditary dominions. Wishing and establishing by this our Imperial edict, that you understand that you are and you ought to be, with your wife, children and family, and your aforesaid goods and possessions, under this our special protection, and in the Holy Roman Empire and our aforesaid Dominions, safe, protected, immune and secure and exempt from all onerous burden and oppression, and that you are able and ought to use, enjoy, and rejoice, as our other continual domestic and court retainers in our court, in each and all privileges, favors, Imperial franchises, and whatever else without, as well as within, our court and anywhere in our lands. In the city of Brussels of the Duchy of Brabant. On the twenty-first day of the month of April, in the year of the Lord one thousand five hundred and fifty-six, and the thirty-sixth of our Empire.

Charles

A. Perrenot[57]

At the order of his Imperial and
Catholic Majesty
Pfintzing[58]

57 Anthony Perrenot, Cardinal Granvelle and chief minister of Charles V, who had been Vesalius' boyhood schoolmate and c.1550 had been responsible for an increase in Vesalius' stipend as imperial physician ([*Vesalius*] *Doctissimo viro D. Joanni Sturmio,* in Roth, *op. cit.,* p. 421). It is quite possible in view of the emperor's lapses into ingratitude, that Granvelle had been instrumental in gaining the title for his old friend. In a letter to Heinrich Petri, the Basel printer, dated 26 August [1556] (*ibid.,* p. 423), and therefore several months after Vesalius had received his title, he speaks of his efforts to obtain a similar recognition for Petri, indicating that he had dealt with Granvelle as well as the emperor. It appears, however, that the quest was unsuccessful; at least no such charter is listed in Lothar Gross (*op. cit.*).

58 A secretary of the Council of State.

First page of the charter creating Vesalius a Count Palatine.

Last page of the charter.

Palatinatus[59] cum nobilitatione et molioratione armorum ac jure civitatum immunitate personali, jure Caesareo Imperiali familiaritate et salvaguardia pro Andreae Vesalio Caroli Majestatis Caesareae Phisico Caesareo.

Carolus Quintus Romanorum Imperator, spectabili, egregio, docto, fideli nobis, dilecto, Andreae Vesalio, artium et medicinae doctori, Sacri Lateranenis Palatii, Aulaeque nostrae Caesareae et Imperialis Consistorii Comiti, Gratiam nostram Caesaream et omne bonum. Quum omnis fere nobilitas ac virtus alicuius strenui et insignis viri, ad posteritatem emanavit cuius ob id descendentes et a vulgo semper distincti, et praecipua quadam veneratione habiti sint, eam denique familiam esse nobilem noscendam arbitramur cuius dignitas et splendor dum ab cuius probitate, sed ex multorum virtute et charitate originem trahit. Perpendentes itaque prout generis et familiae tuae honestatem maiorumque tuorum in medica facultate singularem peritiam ac erga praedecessores, et maiores nostros Romanorum Imperatores Fridericum et Maximilianum ac Carolum Burgundiae Ducem, proavos et avum nostros piae ac felicis memoriae quorum valetudinis cura illis fuit commissa fidei et devotionis studium. Quippe enim atavus tuus Petrus ex Witingorum Wesaliae inferioris familia natus, Imperatoris Friderici proavi nostri, proavus, tuus Joannes diu nostri maioris praefati Caroli Burgundiae Ducis, etiamque avus tuus Eberhardus primus quondam Margueritae Infantis Augustiae Ducissae Burgundiae oriendae avi nostri paterni praecessoris Ipematoris Maximiliani avaeque nostrae conjugis suae ac filiorum medicum egerit; insuper etiam praefati proavi tui Joanni Vesalij cuius et in astronomia et in medicina in communem studiosorum utilitatem edita monumenta adhuc passim in multorum manibus versantur, erga rem publicam literariam praeclara merita. In primis vero considerantes tuam Andrea (ut interim patris tui qui urbis ultra triginta annos a cubiculis et pharmacis fuit, grata et fidelia nobis et Sacro Romananorum Imperio ac inclytae Domui nostrae Burgundiae praestita scientia taceamus) singularem conditionem, et industriam, magnam probitatem et candorem ac propter alia quam plurima ornamenta fortunae et virtutis ac ingenij eximiam ac sacris philosophiae et rerum naturalium cognitionem et scientiam, quod non solum Patavij per sex annos Venetorum stipendijs medicinam profitendo, verum etiam anatomiam sed ea prorsus neglecta ut nunc vero tua opera et studio medicis adeo peculiariter inaudita hactenus industria, solertia, sagacitate et diligentia maximisque sumptibus et laboribus varijs et immodicis Parisiis, Lovanij, Patavij, Bononiae et Pisis, exhibitis publicis humanorum corporum dissectionibus, editoque ante multos annos de humani corporis fabrica volumine tanti eruditionis verissimae judicii, ingenij et industriae, sicque elaborato ut nil usque eloquentius nil doctius, nilque utilius compositum sit, ac facile procul summis omnibus libris qui de anatomiae

[59] It will be readily observed that the Latinity of the charter leaves much to be desired. In part it follows a regular form—perhaps one might say official jargon—for such grants and is identical in part with the charter presented to Cornelius van Baersdorp several months later.

facultatibus conscripti fuerant, praeclara erat illa illustrando, ut tibi cuncti medicae faculitatis studiosi et professores inter omnes praeclaros excellentesque medicos, quos umquam extitisse constat, plurimum debere agnoscuntur, praeclare testatus es. Nos cum idem volumen nobis ad Gueldricam expeditionem proficiscentibus offeres, ut te quam medicum nostrum familiarem ordinarium reciperemus, huius modi tuis virtutibus facile allegisti a quoquidem tempore tam bello quam pace in plurimis difficillimisque itineribus nos continuis laboribus talia plane fidei, industriae, virtutis, judicij ac auctoritate tua documenta de te proposuisti, ut etsi a maioribus tuis multum ornamenti ac decoris tibi accedat, nullis tamen magis quam pro tuis virtutibus ac perceptis, his itaque rationibus aucti, ac tot maiorum tuorum tamque ipsius meritorum immemores esse videamur. Verum tu digna virtutis tuae propriae feras. Motu proprio Romanorum Imperatoris praefatum Andream Vesalium filiosque eius legitimos utriusque sexus tam natos quam nascituros eorumque haeredes et descendentes legitimos in infinitum, nostro et Imperij Sacri aliorumque cognomine pronuntiamus ac Romanorum Imperator concedit aliorum nostrorum omnium aliorum locorum et terrarum vobis nobiles militarios, et tornearij ludi capaces facimus, creamus, confirmamus et erigimus, ac nobilitatis nostri gradu, ordine, titulisque et fascibus insignimini, prout tenore praesentium facimus, creamus, erigimus, attollimus, et insignimus, vosque supra humanae conditionis qualitatem nobilis, et tamque de nobili militario tornearioque gente procreatos dicimus et nominamus ac ab universis et singulis, cuiuscunque status, gradus Romanorum decernentes et hoc nostro Caesareo statuentes edicto, quod posthac ubique locorum et terrarum, tam in judicio quam extra in rebus spiritualibus et temporalibus, ecclesiasticis et prophanis, quibuscunque etiamsi tales essent Romani, omnibus et singulis privilegiis, honoribus, dignitatibusque officiis Romanis uti, frui et gaudere possitis et valeatis, quibus nostri Sacri Romanorum Imperii aliorumque Regnorum provinciarum et ditionum nostrarum, nobis qui conditamus jura, subinde terrarum itidemque aliorum omnium locorum et terrarum boni nobiles Romani. Quo vero status huius nobilitatis tuae vel splendescat tibi praefato Andreae Vesalio, ac filiis haeredibus, et descendentibus tuis antedictis gentilia arma et insignia vestra haeredibus a vobis deferri solita et quae olim a praefato praedecessore et proavo tuo colendae memoriae. Quondam Friderico tertio Romanorum Imperatore praefato proavo tuo Joanni (qui cum Lovanij primis disciplinis operam dabat et medicinae artem docuit, de Wesalia ut illic moris est, a natali solo studiosis cognomine imponendo, ita fuit appellatus, ut eius nomen vobis posteris suis extitit occasio) concessa fuissent videlicet arma nigri seu sabellini coloris in quo tres albae seu argenteae mustellae, quas belenacula lingua vestra, courant capitibus in anteriorem scuti partem vestri, ad rursum dispositae conspiciuntur, supra scutum galeam apertam cancellatam seu tornearium, teniis sive laciniis albi seu argentei ac nigri, eorundemque colorum fascia tortili redimitam, cuius cono inter geminas alas nigras dispensas, mustellae albi seu argentei coloris

antrorsum insident, non solum laudanda, approbanda et confirmanda verum etiam laudanda, molienda et approbanda duximus prout tenore praesentium laudamus, approbamus, confirmamus, largimus et moliaramus, immutantes fasciam tortiliae in coronam regiam auritam, cui aquila nigra binis alis dispansis caudaque in easdem pennas diffluens insignat quemadmodum vel viam Romanorum Caesar volentes et decernentes Romanis, aptique sitis Romanorum Caesari. Praeterea ut tu praefate Vesali, maioribus gratus te a nobis auctum et condonatum sentias, motu, scientia, consilio et potestatis plenitudine, te Sacri Lateranensis Palatii Aulaeque nostrae Caesareae et Imperialis Consistorii Comitem fecimus, crevimus, ereximus et Comitatus Palatini titulo elementer insignivimus, prout tenore praesentium, facimus, creamus, erigimus, attollimus et insignimus,, ac aliorum Comitum Palatinorum numero et consortio gratanter aggregamus et ascribimus, decernentes et hoc Imperiali statuentes edicto quod ex nunc in antea omnibus et singulis privilegiis, gratiis, juribus, immunitatibus, honoribus, exemptionibus et libertatibus, uti, frui et gaudere possis ac valeas, quibus caeteri Sacri Lateranensis Palatii Comites hactenus potiti sunt, seu potiuntur quomodolibet consuetudine vel de jure. Dantes et concedentes tibi praefato Andreae Vesalio amplam auctoritatem et facultatem qua possis et valeas per totum Sacrum Romanorum Imperium et ubique terrarum facere et creare publicos notarios, tabelliones et judices ordinarios ac universis personis qui fide digni, habiles et idonei sint (super quo conscientiam tuam oneramus) notariatus, et judicatus ac tabellionatus ordinarij officium concedere, et dare ac eos eorum quolibet per pennam et calamariam (prout moris est) de praedictis investire dummodo tamen ab ipsis notarijs publicis seu tabellionibus, ac judicibus ordinariis per te (ut praemittitur) creandis, et eorum quolibet vice et nomine nostro, et Sacri Romanorum Imperii, debitum fidelitatis recipias corporale et proprium juramentatum hunc in modum, videlicet quod erunt nobis et Sacro Romanorum Imperio et omnibus successoribus nostris Romanorum Imperatoribus et Regibus legitime intrantibus, fideles Romani. Decernentes ut omnibus instrumentis et scripturis per huiusmodi notarios per te, ut praemittitur, creandos, confectis, plena fides ubilibet adhibeatur, constitutionibus, ordinationibus, statutis vel aliis in contrariam facientibus non obstantibus quibuscunque. Insuper tibi praefato Andreae Vesalio concedimus et elargimur, quod possis et valeas naturales, bastardos, spurios, manseres, nothos incestuosos copulative, vel disiunctive, et quoscunque alios ex illicito ac damnato coitu procreatos et procreandos masculos et feminos quocunque nomine censeantur, viventibus vel teiam mortuis eorum parentibus legitimare (illustrium tamen Principum, Comitum, et Baronum filiis dumtaxat exceptis) et eos ac eorum quemlibet ad omnia et singula jura legitima restituere et reducere, omnemque geniturae maculam penitus abolere ipsos restituendo et habilitando ad omnia et singula jura successionum et haereditatum paternarum et maternarum, etiam ab intestato cognatorum et agnatorum, ac ad omnes honores, dignitates et ad singulos actus legitimos tam ex contractu quam in ultima voluntate,

aut alio quoquo modo, tam in judicio quam extra ac si essent de legitimo matrimonio nati et procreati obiectione prolis illegitimae penitus quiescente. Quodque eorum legitimatio, ut supra, facta; pro legitime facta maxime habeatur et teneatur ac si foret cum omnibus juris solemnitatibus, quarum defectus specialiter auctoritate nostra Imperiali suppleri volumus et intendimus, dummodo tamen legitimationes huiusmodi non praejudicent filiis legitimis ac haeredibus naturalibus. Quin ipsi legitimandi, postquam ut supra legitimati fuerint, sint et esse censeantur ac nominentur et nominari possint et valeant ubique locorum tanquam legitimi et legitimi nati, de domo, familia et casta parentum suorum ac arma et insignia eorum portare possint, et valeant, efficianturque nobiles si parentes eorum nobiles fuerint, non obstantibus aliquibus legibus quibus cavetur, quod naturales, bastari, spurij, manseres, nothi, incestuosi copulative vel disiunctive vel alii quicunque ex illicito coitu procreandi vel procreati, nec possint nec debeant legitimari liberis naturalibus legitimis existentibus, vel sine consensu filiorum naturalium, et legitimorum aut agnatorum aut feudi dominorum, et specialiter in authenticis, quibus modis nat: eff: sin per totum, et §: naturales si de feud. fuer: contro: inter do: et agn: at l: inhibemus, c. de Emancip: lib: et aliis similibus quibus legibus et cuilibet volumus expresse et ex certa scientia derogari, et etiam non obstantibus in praefatis aliquibus contrahentium dispositionibus, et defunctorum ultimis voluntatibus, aut legibus aliis et locorum statutis aut consuetudinibus, etiam si tales essent quae deberent exprimi et de illis fieri mentio specialis. Quibus obstantibus et obstare valentibus in hoc casu duntaxat, ex certa scientia et de plenitudine Caesareae nostrae potestatis totaliter derogamus et derogatum esse volumus. Similiter tibi praefato Vesalio damus et concedimus, ut possis et valeas tutores et curatores confirmare, dare et constituere ipsosque causis legitimis subsistentibus amovere infames tam juris quam facti restituere ad famam, et omnem ab eis infamiae notam abstergere, tam irrogatam quam irrogandam, ita ut de caetero ad omnes et singulos actus legitimos apti et idonei habeantur et promoveri possint, nec non filios adoptare et arrogare, et eos adoptivos et arrogatos facere, constituere et ordinare. Insuper filios legitimos et legitimandos adoptivosque emancipare, et a patris potestate liberare, volentibus vel invitis eorum parentibus vel absentibus et ut hoc fieri possit per procuratorem specialem, tam ex parte parentum quam ex parte liberorum, et adoptionibus, arrogationibus, et emancipationibus quibuscumque omnium et singulorum etiam infantium et adolescentium consentire et veniam aetatis supplicantibus concedere, auctoritatem et decretum in omnibus interponere, servos etiam manumittere, manumissionibus quibuscunque cum vindicta vel sine, et minorum alienationibus et alimentorum transactionibus auctoritatem et decretum, interponere, minores quoque ecclesias et communitates laesas altera parte ad id prius vocata in integrum restituere ac integram restitutionem eis vel alteri eorum concedere, juris tamen ordine semper servato. Deinde ut clementiam ac munificentiam nostram largiorem experiaris, eius-

dem motu, consilio, scientia, et auctoritate tibi, praefato Andreae Vesalio concedimus atque elargimur, ut possis et valeas quolibet anno duos doctores in utroque vel altero jure, vel in medicinali facultate, necnon poetas laureatos, magistros et baccalaureos, adhibitis tamen in qualibet doctoris vel licenciati creatione, adminus tribus in eadem facultate doctoribus, qui promovendos huiusmodi per rigorem examinis sufficientes et idoneos judicent atque collaudent, et si sufficientes et idonei reperti fuerint eis licentiam in eadem facultate impendere, ipsosque more et consuetudine in generalibus studiis desuper observari solitis facere, creare, et promovere atque insignia doctoralia sive sertum, laureum aut baccam, lauream licentiam vel magisterium in eadem facultate, nomine et auctoritate nostra tradere et conferre. Et quod illi per te, ut praemittitur, in doctores vel licentiatos necnon poetas laureatos, magistros et baccalaureos, promoti et promovendi in omnibus civitatibus, locis et terris Sacri Romanorum Imperii et ubique terrarum debeant et possint omnes actus doctorales, legendi, docendi, interpretandi, glossandi, disputandi, cathedram ascendendi ac caeteros quoscunque actus licentiae, laureae poeticae, baccalaureatus et magisterij facere et exercere, omnibusque et singulis gaudere et uti privilegijs, praerogativis, exemptionibus, libertatibus, concessionibus, honoribus, praeeminentiis, favoribus, indultis et gratiis et aliis quibuslibet, quibus caeteri doctores, licentiati, poetae laureati, magistri et baccalaurei Parisiensis, Bononiensis, Patavini, Perusini, Papiensis, Viennensis, Lovaniensis, et in aliis quibuslibet studiis generalibus seu aliter quocunque modo promoti, et insigniti, gaudent et utuntur quomodolibet consuetudine vel de jure, non obstantibus in praemissis quibuscunque legibus, decretis, statutis, conseutudinibus, constitutionibus, ordinationibus, reformationibus, priviliegijs, exemptionibus, gratiis et praerogativis, quocunque nomine censeantur, et cuiuscunque tenoris et munitionis existant, tam factis quam fiendis per nos vel praedecessores aut successores nostros, aut per quoscunque Principes, Duces, Marchiones, Comites, Communitates, Universitates, aut alias cuiuscunque generis vel conditionis sub quibuscunque clausulis et expressione verborum etiam si talia essent de quibus de verbo ad verbum necesse esset hic fieri mentionem specialem in contrarium facientibus. Quibus omnibus et singulis scientia, auctoritate et potestate praefatis in quantum huic nostrae concessioni et indulto obstarent vel obstare possent per praesentes derogamus et derogatum esse volumus. Denuo quo gratiam nostram abundantius sentiatis, te filiosque tuos legitimos et ipsorum descendentes in infinitum quaruncumque civitatum et oppidorum tam nostrae quam Sacri Romanorum Imperii jurisdictionis et ubique terrarum honorabiles cives nominamus, facimus et constituimus, omnium civitatum jura vobis concedentes, ita ut civium varijs privilegiis beneficijs, honoribus, dignitatibus, statutis, decretis, immunitatibus, exemptionibus, ac quibuscunque alijs honorabilium civium juribus, actibus, praeeminentibus, officiis et magistratibus uti, frui et gaudere possitis et debeatis quibus caeteri viri et reales cives et Patritij Romani aliorunque huiusmodi civitatum et locorum originarii cives hono-

rabiles indigenae, qualitercunque habent, utuntur, fruuntur et gaudent consuetudine vel de jure. Insuper concedimus et indulgemus tibi et uxori tuae, liberisque et descendentibus vestris utriusque sexus, ut quandocunque vobis visum et quomodo fuisset in aliqua civitatum aut oppidorum tam nostrae quam Sacri Romanorum Imperii jurisdictionis habitare, ibidem et alias per totum Romanorum Imperium, dominia nostra haereditaria, tu et uxor ac liberi et descendentes praefati ac etiam domestici et familiares uti et ipsorum domestici, a quibuscunque omnibus muneribus, impositionibus, realibus personalitatibus, sive mixtis, ordinariis et extraordinariis quibuscunque et perquemcunque imponantur, seu exigi valeant quacunque praefulgeat auctoritate, dignitate aut potentate, atque etiam ab omnibus exactionibus tributi, custodiae et cubiarii militiae, adlevati a gabellis, datiis, pedagiis, theloniis, angariis, imperialibus angariis, strenis, accisiis muniti ab omnibus consulatus,, magistratus, et cuiuslibet alterius functionibus, et praecipue ab omnibus sospitandorum militum, et aliis quibuscunque omnibus et gravaminibus tam impositis quam et caetera ex quibuscunque causis imponendis, absoluti, liberi, immunes penitus et exempti constantur sint, et esse debeant, ita ut ad aliqua ex praefatis nullomodo teneamini, aut eadem a vobis ac suis, ut supra, ullo modo vel forma conari vel exigi possint, nisi forte possessiones seu bona urbania vel civilia in eiusmodi locis civilibus, quo quidem casu ab illis jura consulta ordinaria persolvere teneamini. Quodque liberum vobis sit ac esse debeat in praefatis civitatibus et oppidis, quoscunque patritios, tribunitios aut alios honestos civium congressus et congregationes ingredi, eisque quandocunque libuerit rursus recedere ac omnino ex praefatis civitatibus aut oppidis cum omnibus bonis et rebus tuis sine ulla molestia aut impedimento magistratus rursus emigrare et expedire aliaque vos conferre non obstantibus in praefatis quarumcunque civitatum et locorum legibus, statutis, et consuetudinibus, aut aliis constitutionibus, ordinationibus, decretis, praescriptis, prohibitionibus per nos aut praedecessores nostros sub quibuscunque eitam causulis factis aut editis, aut descriptis edendis, alijsque in nostris artium facultatibus quibuscunque, quibus omnibus et singulis, ex nostra scientia, et de potestatis nostrae plenitudine in quantum cuius nostro indulto obstare possent, derogamus et derogata esse volumus per poenitentias illis tamen quoad alia in suo robore duraturis et permansuris. Praeterea concedimus et elargimur tibi praefato Vesalio jus et facultatem in omnibus libris, epistolis, scripturis, instrumentis clausis et apertis, et aliis quibuscunque artibus tam tua quam aliorum magisteria quorumcunque et qualitercunque caetera rubrica utendi, verum ut tu praefatus Vesalius privilegiis suprascriptis liberius uti possis. Tunc quod jamdudum in medicum nostrum ordinarium adscripsimus. Denuo in familiare et aulica nostra notimus domesticum perpetuum, et tu cum uxore, liberis et familia, ac bona tua et illorum, domesticis, praesentia et futura, mobilia et immobilia, praedia, possessiones vel jura legitime tandem acquista et acquirenda in nostram Sacri Romanorum Imperii aliorumque principatuum et dominiorum nostrorum haereditariorum perpetuam spe-

cialem protectionem, tutelam et salvaguardiam assumpsimus, et recipimus atque tenorem perpetuum recipimus et assumimus. Volentes et hoc nostro Caesareo edicto statuentes, quod sis, intelligaris, et esse debeas una cum uxore, liberis et familia, bonis et rebus tuis praedictis sub hac speciali protectione nostra, et Sacri Romanorum Imperii Dominiorumque nostrorum praedictorum salvus, protectus, immunis et securus ac exceptus ab omni onere, gravamine et oppressione, quodque omnibus et singulis, privilegiis, gratiis, franchisiis Romanis et alijs quibuscunque tam extra quam intra aulam nostram et ubique terrarum, uti, frui et gaudere possis et debeas quibus alij familiares et aulici nostri continui domestici in aula nostra. In oppido nostro Bruxellensis Ducatus Brabantiae, Die vigesima prima mensis aprilis, anno Domini. Millesimo quingentesimo quinquagesimo sexto. Imperij nostri Trigesimo sexto.

A. Perrenot

Carolus
Ad mandatum Caesareae et Catholicae
Majestatis proprium
Pfintzing

In Memoriam

E. P. Goldschmidt—Bookseller and Scholar

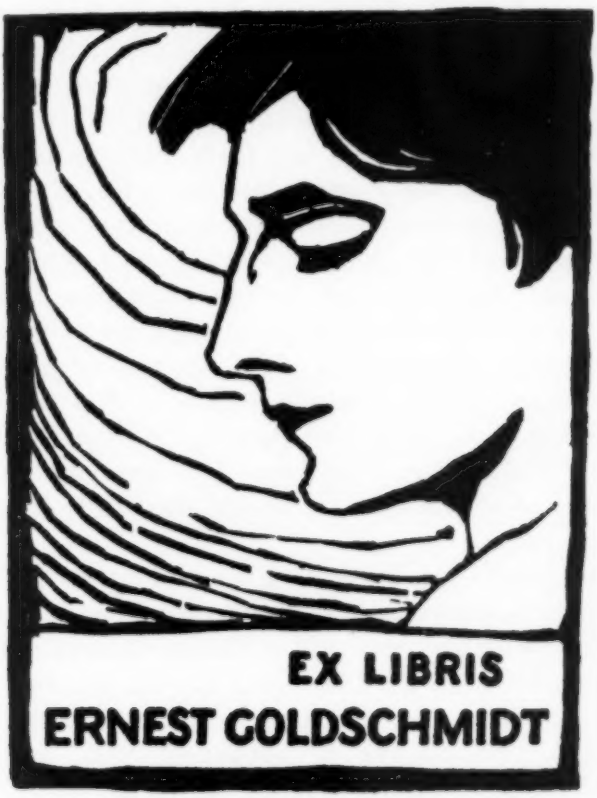
E. WEIL

ON 7 June 1940, on one of his usual after-lunch promenades, EPG picked up a seventeenth century heraldic MS for a few pounds and brought it to Bond Street. "Ein kleines Freuderl" (a small delight), he said as he showed it to me. It was a quarto with over 150 painted coats of arms of mediaeval noble families of Serbia, Croatia, Dalmatia, of the ancient Illyrian Empire of King Stepan Dusan of the Nemanja dynasty (1308-55)—a nobility totally exterminated by the Turks after their victory in 1389. This seventeenth century MS claimed to go back to a very ancient book made by King Stepan Dusan's herald and preserved in a library on Mount Athos. The vellum binding had the Frangipani arms on both covers, and EPG soon found out its provenance from the Duke of Cassano-Serra's library of Naples, sold in London in 1828. It was one of the volumes rejected by Lord Spencer who had bought the whole library. Numerous visits to the British Museum and long conversations with Sir Stephen Gaselee followed, and I profited greatly for some weeks during our lunch hour in learning about the mediaeval history of the Serbs, the humanity of the Turks who slaughtered comparatively few of the Serbo-Croat nobility but made them enter monasteries, take the vows, and thus die without posterity. They brought their family heirlooms and MSS with them into the convents, some of these Goldschmidt had seen when working for the *Gesamtkatalog der Wiegendrucke* in the Balkans before the First World War. There followed researches into the Croat and Naples branches of the Frangipani family. In Catalogue 100, the catalogue of choice books and MSS sold but never before described in print—the last monument EPG erected for himself— no. 98 describes this Armorial on two closely printed pages. Eventually it was sold for £20.

Having been brought up like a young prince, with an unheard-of income as an undergraduate and suddenly by the fortunes of war and the Austrian inflation made a comparatively poor man (comparative of course only to the wealth of his family before 1914), EPG had a complete disregard for money. He never was happy with a credit on his bank account until it was spent and he

Dr. E. P. Goldschmidt at Zurich in 1938

often told me he would like to die with a sound overdraft and a marvellous stock—like old Quaritch—"but what a stock"! When leaving for the U.S.A. in December 1936 after the Mensing sale there was a very small balance left. I never knew him more happy than returning from Cook's with his ticket and as large as possible a letter of credit in his pocket. The Mensing bill with Sotheby's



One of Dr. Goldschmidt's early bookplates.

was considerable. "You will manage, Weil, after all, what would Sotheby's do"?

His aim in buying was to find something for a collector he liked, or a library, or some extraordinary book or manuscript which appealed to him. A good many of this last category ended on shelf H_4, mostly thin quartos, exquisite items of an esoteric taste, and easily spotted in the long run of his catalogues by repeated printing of the descriptions. The volumes were first placed on a shelf upstairs to be fetched down for description in due course. Some never left the first shelves: puzzles which could not be solved,

"crimes"—i.e., books one should have never bought ("kleine Malheure")—or items which proved to be of greater interest before than after purchase. I remember at one time Virgil Wellendorffer's quartos accumulating there; they stayed for a year or two only to be rejected in the end, as "very obscure and negligible (books) by a most obscure and negligible author . . . " (See *Mediaeval Texts and Their First Appearance in Print,* (Suppl. 16, *Trans. Bibliogr. Soc.,* 1943, pp. 112-113). For a long time there stood, too, a seventeenth century French binding with an undecipherable cipher. The interest in Gothic and Renaissance bindings had nearly waned a few years after his now famous work on them had been published, and we handled comparatively few such bindings of that period, with the exception of the Fugger bindings. His almost complete series of reference books on bindings was stored in my garage for nearly ten years—"all there is to be said is in my Gothic and Renaissance Bindings." And although he held on to the "Ref.-Library" like a dog to a bone, these books were sold, not even from a catalogue but through a shabby list. His interest for some years centered on the romanesque bindings which, with a number of fine mediaeval texts, came from the Austrian monastery libraries of Admont and Melk. But I will not deal here with these noble volumes, some of which have been described in Catalogue 100 or elsewhere.

When, in June 1933, I joined EPG as a partner after years of friendship as booksellers, it was intended to balance the mediaeval side of the firm with a science and medicine department. I brought some experience in this field with me, having specialized in it for ten years at Munich. Now, at forty-two, I was given a thorough, new training. The dangers of "suppressio veri" and "suggestio falsi" in making descriptions were explained to me, and, of course, how sometimes the temptation was too great and one had to yield. Our secretary, R. O. Dougan, F.L.A. (now Asst. Librarian, Trinity College, Dublin), had to watch every word I wrote, and I had many a sad moment with my pronunciation. "You will never learn it—the Swabians can't, remember Kratzer[1]—besides your Latin is poor, very poor." I often sighed: "You missed your vocation, you should have been a schoolmaster" (which pleased him). In 1935 EPG edited Burchardus de Bellevaux, *Apologia de Barbis,* a twelfth century MS in defence of beards (see Cat. 100, no. 23) with a

[1] Nicholas Kratzer, well known from his portrait by Holbein in the Louvre, a native of Munich, was instrument maker to Henry VIII. He is reputed to have answered Henry VIII about his bad English: "Pardon, your Highness, but how can a man learn English in only thirty years?"

preface and notes in Latin. Sometime after, he had a two-folio letter from a learned Capuchin explaining numerous mistakes in his Latin preface and in the notes. "He is right—I do not mind what he says about the notes, but I could kill myself for the elementary mistakes I made in the preface." For some time I had less to suffer for my poor Latin. A copy of the *Apologia* was bound in violet morocco to be presented to the Pope in private audience. This audience provided one of the finest anecdotes when EPG returned from Rome. Every journey, especially those to the U.S.A. produced some such story—mostly 'on' himself, which should count greatly to his credit. He departed for Rome with some anxiety, for it was known that the Pope liked to address people in their own language. "Dutch will not do (he scarcely spoke it)—and if I say 'Hebraeus sum,' it is worse still." The Pope addressed him in English and gratefully accepted the *Apologia*; but when he held out his hand for EPG to kiss the ring of St. Peter, EPG understood too late, for which he never forgave himself.

The *Apologia* gave rise to another favourite anecdote, often told. We had a client in New York, Mr. de Zemla, a barber at Rockefeller Center who collected books, etc., on beards. EPG, in the winter of 1935, went there to have a shave and saw a gentleman at the counter whom he believed to be Mr. de Zemla. When he gave his name, this gentleman exclaimed, and EPG intoned it strikingly: "Are *you* Mr. Goldschmidt of London?" producing from under the counter the *Apologia de Barbis* which had just been published.

A good many of the books and manuscripts which passed through his hands as a bookseller were mentioned in his many papers, pamphlets, or books. The most important of the MSS he handled, the St. Hedwig Hours which passed to the Morgan Library, was described in a privately printed pamphlet: "The Hours of St. Hedwig, Duchess of Silesia. A Twelfth Century Manuscript Containing a Picture Bible" (*n.p.*, 1928, sm. fol. 18 pp. with 7 plates). It was composed with the help of Montague R. James, Provost of Eton, whom he venerated all his life. The *Mediaeval Texts and Their First Appearance in Print*, printed for the Bibliographical Society in 1943, has as its backbone the numerous mediaeval texts which passed through his hands. I well remember how he examined the "sold slips" before composing it. The "sold slips," arranged in many boxes, were the greatest treasure in the house; to misplace one was a "crime"—the thought of losing one was really

unthinkable. They were the only thing to be saved in a catastrophe,

During the twenties three fifteenth century libraries of doctors were discovered, and many of their books passed through our hands: the books of Dr. Nicolaus Pol, Ulrich Ellenbog, and Hieronymus Münzer. I shall speak here only of the Münzer books and their disposal, a long and carefully prepared undertaking. In 1916, when helping to list incunabula for the *Gesamtkatalog*, EPG visited for the first time at Nikolsburg in Moravia the Prince Dietrichstein Library which contained more than six hundred incunabula. "I soon found out that a considerable part of these early printed books had the same provenance, and the repeated ownership entries in the covers showed me after a few hours that the Library before me was based on the collection of books by Hieronymus Holzschuher whose portrait by Dürer is well known. Within it were incorporated the books of his father-in-law, Dr. Hieronymus Münzer of Feldkirch, who died in 1508 as town-physician at Nuremberg." About 150 volumes of Münzer's library, probably more than half of all his books, were there, "giving an idea of an important Nuremberg humanist's library, the books of a contemporary and friend of Hartmann Schedel." The Dietrichstein Library was sold in November 1933 and June 1934 at Lucerne, and more than twenty years after EPG had found and made his first list of the volumes, his book on Münzer was published (*Hieronymus Münzer und seine Bibliothek*, London, The Warburg Institute, 1938). It was the first great book which he wrote (with the collaboration of Dr. S. H. Steinberg) after I had joined him. Business took second part on such occasions, and in my copy of it is the characteristic dedication: "Seinem geduldigen E.W. mit wiederholter Bitte um Verzeihung, dass soviel wertvolle Zeit auf dieses Buch verschwendet wurde. E.P.G. 28. März, 1938." While the book was in the press, EPG lectured on Münzer, Ellenbog, and Pol (Hieronymus Münzer and Other Fifteenth Century Bibliophiles. *Bull. N. Y. Acad. Med.*, 1938, *14*, 491-508).

His interest in the humanistic circle at Nuremberg centering about Münzer, Willibald Pirckheimer, and Hartmann Schedel never ceased[2]. He often visited Feldkirch, the birthplace of Münzer (and of Rheticus), and these visits resulted in a long friendship

[2] At the Royal Society's memorable sale of the Pirckheimer books (May 4, 1925), he bought a great many items, especially those fat "Sammebände" which, when separated, filled his Catalogue 7 "Incunabula, humanists, reformation tracts from the library of Willibald Pirckheimer," one of his finest catalogues. (In it is also the description of the 1559 Geminus-Vesalius, the second edition, now listed in the Cushing short-title catalogue as V91.)

with the late Professor Joseph Fischer, S.J., the eminent cartographer to whom the Münzer book is dedicated. Nuremberg in the second half of the fifteenth and first half of the sixteenth century was a center of geographical studies; "no other town has ever housed such a succession of prominent students of geography as Nürnberg, where Regiomontanus planned a Latin Ptolemy as early as 1472, where his pupil and literary heir, Joh. Werner, was the first to elaborate the mathematical bases of map-projection, where Martin Behaim, the practical navigator, made his globe in 1492, and Johannes Schöner his globes in 1515, 1520, and 1533, where Erhard Etzlaub printed his first road-map in 1501, where Conrad Heynfogel brought out the first German translation of Sacrobosco's Sphaera (1516), and Jobst Ruchamer that of Montalboddo (1508)." I quote this sentence from a paper of his on Cochlaeus[3], a Nuremberg schoolteacher, the author of some grammars and geographical commentaries. He was a great favourite of EPG—he read through all his books, especially the prefaces (he often said, "Read the preface, remember Dibdin"). His interest in early maps, especially the out-of-the-way items, never ceased. During a visit to Dalmatia for the *Gesamtkatalog* in the spring of 1914 he visited the Franciscan convent on the Island of Lesina ("Hvar" in Croat) and found there a painted map of the Caspian Sea. Thirty years later he published it, a charming paper, full of autobiographical detail relating to his activity for the *Gesamtkatalog*. Here again he indulged in Balkanese philology[4]. A true find, bound with a Waghenaer Atlas, which pleased him greatly, was the earliest known nautical sailing chart of the Thames, engraved about 1602-06 by Benjamin Wright[5]. The *Golden Hind*, Drake's ship, beached near Deptford, can be seen on it.

Two catalogues, both of great originality and unsurpassed in scholarship for a bookseller's catalogue, were published at that time: No. 31, "The Renaissance in France" (1934), and No 50, "Sources of English Literature before 1640" (1938), "describing original and early editions of books which form the back-ground of English Letters," a theme which occupied his mind to the last minute, for the Sandar Lecture, which he was too ill to read and which will now be published posthumously, deals with the influence of Continental printing on Renaissance printing in England.

3 (Johannes Cochlaeus and a problem in XVIth century cartography. *Geogr. J.*, 1933. *82*, pp. 343-350)

4 The Lesina Portolan chart of the Caspian Sea. *Geogr. J.*, 1944, *103*, 272-278.

5 Now in the Maritime Museum, Greenwich. See EPG Catalogue 58, no. 178.

These years up to the beginning of the Second World War were probably the happiest period of bookselling, combined with scholarly work and enriched by friendships with the late Professor Saxl of the Warburg Institute, Sir Stephen Gaselee, Lord Keynes, F. S. Ferguson, John Carter, William A. Jackson, Dr. Fulton, Stanley Morison, and Dr. Klibansky from Heidelberg whose erudition startled Goldschmidt. He used to call him "das gescheite Kind." Saturday afternoons were regularly spent at the British Museum to work up the bibliographical queries which had accumulated during the week and at about 5 p.m. we met at an ABC nearby for the "Bibliographer's Tea."

Usually I did not see EPG before 1 p.m. or 1:30 p.m. when we went out at once for lunch where we discussed the business events. The routine work had been done; I sent the mail upstairs at about 11:30 and he quickly went through it. Some playful fight with the cat followed. After lunch he went for a stroll when it was fine, paid some visits, or did some research, returning between five and six when the last business affairs were attended to, usually very quickly. Before dinner *The Times* cross-word puzzle was solved (mostly), after dinner, some more play with the cat; and more often than not a visitor turned up who perhaps stayed for hours, regaled with coffee he made himself. Only then, well after midnight, were the famous descriptions on small square slips composed—every morning I found a small pile on my desk, including (during the first two or three years) my own, improved, edited, or even rewritten. Before retiring in the early hours of the morning he often went to the all-night Lyons Corner House near Picadilly for a glass of milk.

The most important business event every year was the trip to the U.S.A., regularly in December, which lasted for about three months. The itinerary was most carefully prepared and his purchases adjusted to it for a long time before. Not without some nervousness were the books selected which he took with him. There were the outstanding rarities for the Morgan Library, the fine bindings for Wilmerding, the woodcut books for Küp, Hofer, and others, the medical manuscripts and books for Dr. Cushing, Dr. Fulton, and for the hoped-for new physician collectors, the Philo and Flavius Josephus MSS for the late Ph. Goodhart, the science firsts for Buffalo, the selections for the Newberry Library, and the Boston, Harvard, Yale, and Cleveland libraries, and for many other clients he intended to see. Often I had cables for items to fill some gaps or I reported finds, as, for example, the earliest oil portrait of

Jenner by John Raphael Smith which found a prompt home over there. The descriptions were mostly just in print in a new catalogue. Catalogue 100 (1953) which contains never-before-printed descriptions was in his mind for almost twenty years; we often discussed it.

Those of course were the years when rare and desirable books were to be found and to be had. In the autumn of 1933 we had two copies of the Rheticus (Danzig 1540), the illustrious quarto announcing Copernicus' revolutionary theory for the first time. (They were in stock for two years.) In five months we had as many first editions of Roentgen, four copies of the *Augenspiegel* of Helmholtz, the rare Oersted *Experimenta* (Copenhagen 1820), never seen since, the Linnaeus *Systema Naturae* of 1735 in folio (the only copy as far as I know offered in our times which went to Dr. Cushing), the Euripides first edition (Hain 6697, now in Morgan Library—only one other copy, the Renouard-Heber copy, has turned up since), several copies of the rare Semmelweis, numerous rare Kepler, Brahe, Copernicus books, and last, but not least, the first *Encomium Moriae* of Erasmus. This "Praise of Folly," written in 1509 when Erasmus was a guest of Sir Thomas More, was printed by Giles de Gourmont at Paris in 1511. It turned up at the end of June 1935 in an Amsterdam sale. Although it was obvious that Goldschmidt should buy it, for one reason or another I had to go over. We discussed what catalogue price one could make for it and when I said goodby, he looked at me from the side: "Don't come back without it." I had to outbid the Librarian of Rotterdam and paid a good deal more than we hoped to sell it for. After the sale, the Rotterdam Librarian approached me, I telegraphed EPG, but he was adamant, he must hold it in his hands first. Hardly a month later the book was acquired by the Friends of the National Libraries for the British Museum "for the very reasonable sum of £250," as a leader in *The Times* said. As it so often happens, rare books turn up in twos. I remembered another copy of Erasmus' Praise of Folly somewhere, which in fact we could secure a few months later at a more reasonable figure—it is now in Dr. M. Bodmer's library.

These were also the times when we helped to build up some special collections, as Lord Keynes' French philosophers, the Flavius Josephus literature (Goodhart), several early photograph collections, the Einstein collection of Dr. Cushing, Dolet and Fernel editions (Sir Charles Sherrington), a small incunabula

collection for the college library of Miss Goodhart ("those poor girls have no incunabula at all," the late Mr. Goodhart used to say).

The war years were trying. A last opportunity to go to the Continent early in 1940 resulted in the purchase of cases of interesting books from Cassini's library; they arrived just before the Continent was closed to us. Confined to Bond Street, depressed by the events of the first years of the war, cross with me because I made him evacuate most of the books, EPG passed the long months.

And now he has gone, very ill for many months, but never saying a word about it, working to the last hour. His final work, a printing history of the Dialogues of Lucianus of Samosata, intended as a tribute to the late Professor Saxl who inspired it, remained unfinished.

A great European, an original scholar, a distinguished bookseller, a fascinating and inspiring friend is our loss.

[NOTE BY THE EDITOR: Ernst Philip Goldschmidt was born of Dutch ancestry in Vienna on 1 December 1887. Receiving his early schooling at the Royal Gymnasium at Vienna, he proceeded to Trinity College, Cambridge, where he became associated with a group of young book-collectors and with the eminent bookseller, Gustave David. He returned to the Continent where he was soon identified with the international book trade, and where he took occasion to familiarize himself with some of the great monastic libraries. Though born of a wealthy family, he found his income from Continental sources cut short by the war, and it was this circumstance among others that caused him to return to England in 1923 where he established the well-known firm at 45 Old Bond Street. As Dr. Weil has pointed out, he became known as much for his scholarship as for his remarkable knowledge of old books, manuscripts, and Renaissance bindings. He was on intimate terms with many collectors in the field of old medicine, such as Harvey Cushing. His regard for Dr. Cushing is well illustrated by the papers he, Dr. Weil, and Sir Geoffrey Jefferson contributed to this Journal in 1946.* His premature death on 18 February 1954 at the age of sixty-six has been keenly felt by collectors and scholars throughout the world.]

* A doctor and his books: Harvey Cushing and his library. Goldschmidt, E. P. Recollections of Harvey Cushing and his book-collecting. *J. Hist. Med., 1,* 229-234; Weil, E. The formation of the Harvey Cushing collection. *Ibid,* 234-246; Jefferson, G. Harvey Cushing and his books. *Ibid,* 246-253.

Notes and Queries

Edited by Ralph H. Major, M.D.,* and Dorothy M. Schullian, Ph.D.**

An Unrecorded Jenner Imprint

As part of his campaign to promote vaccination in America, Benjamin Waterhouse frequently sent to the Boston newspapers extracts from letters which he had received from Edward Jenner and other leading British physicians. Thus in the *Columbian Centinel* for October 7, 1801, the following unsigned letter to the editor appeared:

Mr. Russell,

THE following paragraph of a letter, written by the celebrated Dr. JENNER, to Dr. WATERHOUSE, dated *London,* July 18th, 1801, may be considered as the GOLDEN RULE in the *Vaccine* Inoculation:—

"I don't care what British laws the Americans discard, so that they stick to this—NEVER TO TAKE THE VIRUS FROM A VACCINE PUSTULE FOR THE PURPOSE OF INOCULATION, AFTER THE EFFLORESCENCE IS FORMED AROUND IT. I wish this efflorescence to be considered as a sacred boundary over which the lancet should never pass."

The Doctor adds, "an *hundred thousand* persons, upon the smallest computation, have been inoculated in these realms. The numbers who have partaken of its benefits throughout *Europe,* and other parts of the globe, are incalculable; and it now becomes too manifest to admit of controversy, that the annihilation of the small-pox, the most dreadful scourge of the human species, must be the final result of this practice."

However it might appear to the casual reader, the final paragraph of this communication was derived not from Jenner's personal letter, which is now preserved in the Yale Medical Library, but from his brief pamphlet, *The origin of the vaccine inoculation* (London: printed by D. N. Shury, Berwick Street, Soho, 1801), a few copies of which he had recently sent to the Cambridge professor.

A month later Waterhouse decided that the entire pamphlet was worthy of republication for his American audience, and in the *Columbian Centinel* for November 7, 1801, the *Origin* appeared in its entirety (except for the title page), preceded by another unsigned note to the newspaper's editor:

MR. RUSSELL,

I BELIEVE it will be admitted, that it has ever been the trick of Europeans, whenever any great discovery in science, or improvement in the economy of life, have been made, for persons in each nation to endeavour to fix the honor thereof on some one of their own nation. With respect to American discoveries and inventions we know it to be the case; and I well remember an epigram on the subject in the CENTINEL about fourteen years since:—If I mistake not it was this:

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** Rome, Italy.

"To *steal* what others honestly acquire,
Europe, through envy, pines and lingers:
She'd stolen from FRANKLIN his *electric fire,*
But that she fear'd 'twould *burn her fingers.*"

Recently it appears that a Frenchman has put in a claim for the honor of having discovered the *Vaccine Inoculation.* How far the claim may be just, time may discover: But in any event, the history of the origin of this bane of the Small Pox, as given by the celebrated Dr. JENNER, in a communication made to Dr. WATERHOUSE, must be interesting: It is as follows:— [Thereafter the text of the pamphlet.]

This edition of the *Origin* was not recorded by W. R. LeFanu.[1]

JOHN B. BLAKE

A Fifteenth Century Vade Mecum

The Royal College of Physicians has recently bought a small manuscript book of receipts, written in the fifteenth century and probably in its first fifty years. It is made up of 16 leaves, in a modern binding: 1, 2 and 11 to 16 are of vellum, and 3 to 10 of paper, carrying watermarks on leaves 7 and 10: the page size is now just over 14 by just under 10 centimetres and was originally somewhat larger, for when the pages were cut some sidenotes were damaged, but the text was left generally unharmed. All the paper leaves, and two of the vellum, have been repaired at some time.

The paragraph headings throughout are written in a red ink which has lost nothing of its colour with the passing of five hundred years, but the black used for the text has faded slightly; on the first page, where the writing has faded very badly, the general heading to the whole work and the introductory paragraph have almost vanished and failed to respond to ultra-violet light; they were presumably written in a different ink since the first recipe, on the same page and in very nearly as bad a state, was readily legible under the lamp.

The script is, as a whole, good and clear. The language used is English with an occasional word or phrase in Latin or old French, the former being the more common, and from certain of the forms and spellings employed it seems likely that the writer was of north country or Scottish origin. In the text there is no exhaustive treatment of the effects, properties, and administration of individual drugs, such as would be found in a herbal. Instead, each paragraph is devoted to the treatment of a particular ailment, such as, for example, the one on the common cold: "For ye Reme & for ye poison in ye hede: tak a rede onyon & kerff it small ande seith it in a litill asel [vinegar] & ale; till [? work] hony in a pott & when it is well sodyn put therto a sponfull of mustarde & lat tham seith well to gidder, ande then lay ye man upe right & put a litill in his nose, & then lat hyme stande upe right & sness oft; do so two or thre daies thries, & holde a sponfull in his mouth."

1 *A bio-bibliography of Edward Jenner, 1749-1823,* Philadelphia, J. B. Lippincott Company [1951], pp. 58-59.

A certain leaning towards physical violence, characteristic of the times, may help to explain the number of receipts dealing with fractures and wounds. "A goode oyntment for a newe wounde, to heell it: Tak diteyne, egrimone & ambros, & stampe ich herbe by hym selff, & tak elik myche jus of iche herbe, elik miche jus, & put it in a pane & do yrto [thereto] may buttir & lat tham seith to giddir to ye halff deill be sodyn, & then set it downe of ye fiyer & streyne it in to A basyne till it be cold, & then box it." For defective hearing the choice lies between "Fore defnes: Tak jus of rue clarified & do in ye eer at morowe & at evyn leuk warm ix daies"; and (a more ambitious prescription) "For a man yat can not heir: tak marowe of a calff ande grynd it in A mortar ande do it in his eyr; also it is good for all evilles in ye heede." Some help is given in differential diagnosis. "Her is a medcyne fore to knowe which is a hoot fistir & which is ye colde fistir of gouttes, for yr [there] is ii manyre of goutes. Nowe first ye hoot gout or fistir hath a broide hoill [broad hole] and ye colde fistir hath a narowe hoille"; the decision having been reached, medicines are prescribed for both the hot and the cold variety.

Unhappily the manuscript ends at the beginning of a section on preserving herbs. It is, of course, impossible to say how much more there may have been of the original manuscript, but since, with these 32 pages at hand, the user would be able to cope with a very large proportion of the cases that he would meet—from "sore toth" to "ye wounde on ye hede if ye skolle of ye hede be brokyne," from "feuer quartane" to "dropsye," from "ye stiche in a mannys side" to "migraine or wynde in ye hede"; and since he would also have detailed advice on how to prepare his medicines and dressings for them, it seems likely that there is not in fact a great deal missing.

Naturally enough, the patient of those days was interested in the outcome of his ailments or injuries. In an effort to satisfy his anxiety there were evolved certain prognostic prescriptions, one of which appears in this book. Today its accuracy as a test is bound to be called in question; but the staccato monosyllables of the last eleven words convey a sad sense of inevitability: "For to knowe whidder a man that is woundede shall liff or dye medicina. Tak jus of pympernell and tempir it with watir, ande giffe it to hyme drynk it; and iff it cum out at the wounde yen he shall dye."

The punctuation in the extracts has been added for ease of reading. My thanks are due to the Keeper of the Department of Manuscripts of the British Museum and his staff for help on various points connected with this manuscript.

P. Pasley Dean

On the Supposed Exclusion of Butchers and Surgeons from Jury Duty

"Every body knows," wrote Bernard Mandeville (1670-1733) in his celebrated *Fable of the Bees,* "that Surgeons in the Cure of dangerous Wounds and Fractures, the Extirpations of Limbs, and other dreadful Op-

erations, are often compell'd to put their Patients to extraordinary Torments, and that the more desperate and calamitous Cases occur to them, the more the Outcries and bodily Sufferings of others must become familiar to them; for this Reason our *English* Law, out of a most affectionate Regard to the Lives of the Subject, allows them not to be of any Jury upon Life and Death, as supposing that their Practice it self is sufficient to harden and extinguish in them that Tenderness, without which no Man is capable of setting a true Value upon the Lives of his Fellow-creatures. Now if we ought to have no Concern for what we do to Brute Beasts, and there was not imagin'd to be any Cruelty in killing them, why should of all Callings *Butchers,* and only they jointly with *Surgeons,* be excluded from being Jury-men by the same Law?"[1]

This paragraph occurs in a passage on the luxury of eating meat and the cruelty of slaughtering animals. Oddly enough, it appears to take the callous nature of practising surgeons half for granted and seeks to demonstrate that butchers are equally hard of heart. At any rate they are linked together as unfeeling men of blood, and it is alleged that both are excluded from jury duty in capital cases. Like so many things that "everybody knows," this happens not to have been true. Mandeville's mistake must have been a common one, however, at least as regards the exclusion of butchers: his editor points out that Locke (1693) and Swift (1706) made a like error.[2] Dix Harwood quotes Dryden in defence of authors:

> No Critick's Verdict should, of right, stand good,
> They are excepted all as Men of Blood;
> And the same Law shall shield him from Their Fury,
> Which has excluded Butchers from a Jury.[3]

From Plutarch and Ovid to John Locke, from patristic times to the present day, one of the chief objections to cruelty to animals has been the belief that it is a preliminary to cruelty to human beings: indeed, until the rise of the modern humanitarian movement this was almost the only ground for complaint against the abuse of brutes. In Sir Thomas More's *Utopia,* all butchery is performed by slaves, "for they permit not their free citizens to accustom themselves to the killing of beasts, through the use whereof they think that clemency, the gentlest affection of our nature, doth by little and little decay and perish."[4]

F. B. Kaye, Mandeville's editor, remarks (*loc. cit.*) that "it was, possibly, the custom to challenge surgeons or butchers proposed as jurymen, under the supposition that they had become callous; and this may have

[1] Mandeville, Bernard. *The Fable of the Bees: Or, Private Vices, Public Benefits,* ed. F. B. Kaye, Oxford, Clarendon Press, 1924, I, pp. 174-175.

[2] Citing Locke, *Works,* ed. 1823, IX, 112; and Swift, *Prose Works,* ed. Temple Scott, I, 277.

[3] Second Prologue, Dryden's *Second Love;* quoted by *Dix Harwood. Love for animals and how it developed in Great Britain.* (Columbia dissertation.) New York, 1928, p. 74, n. 140.

[4] More, Sir Thomas. *Utopia.* (Harvard Classics, vol. 36.) New York, 1910, p. 196.

become so current a custom that it was confused with law." Harwood similarly points out that a defendant could challenge any juror without reason because of his own nameless prejudices,[5] the common prejudice against butchers leading to their frequent exclusion from juries and the popular notion that they were so excluded by law.

In eighteenth-century France this supposed provision of English law with regard to butchers was frequently mentioned by animal lovers, as indicating England's recognition of the tendency of cruelty to enlarge its domain.[6] Sometimes surgeons are lumped together with butchers. Rousseau even extends this exclusion to witnesses, asserting that in England "les bouchers ne sont pas reçus en temoinage, non plus que les chirurgiens,"[7] a word order reminiscent of Mandeville, as if both suggested that butchers are certainly cruel, perhaps even as cruel as surgeons. Rousseau corrects his statement in a note: he admits that butchers and surgeons are acceptable in England as witnesses, but thereupon echoes the old mistake that butchers are ruled out as jurors.

As a matter of fact surgeons had been freed from jury duty in England as early as 1513, not because they were deemed unfit for the responsibility, but because "there be so small number of the said fellowship of the craft and mystery of surgeons, in regard of the great multitude of patients that be, and daily chance, and infortune happeneth and increaseth in the foresaid city of *London,* and that many of the King's liege people suddenly wounded and hurt, for default of help in time to them to be shewed, perish . . . by occasion that . . . [the surgeons] have been compelled to attend upon . . . juries. . . ."[8] That surgeons were *excused* from jury duty may account in part for the common erroneous belief that they were *excluded;* but the fact that butchers, who were not excused on grounds of pressing business, were also believed to be barred from juries, together with the fact that butchers and surgeons were mentioned in the same breath as ineligible for the same reason, clearly indicates the existence of strong disbelief in the general good will and good heart of the surgeons. Like butchers, they were thought to be inured to wounds and blood, and hence to be cold, callous, and devoid of pity. This widespread prejudice was not without importance in the history of surgery.

In 1875, no less a man than George Rolleston, testifying before the first Royal Commission on vivisection and expressing his concern about "the unworked-out beast which exists in man," assured the Commissioners that "a butcher in France is not allowed to sit on a jury."[9] This was apparently ac-

5 Harwood, *loc. cit.*, citing Blackstone, *Commentaries,* iv. 27, 353.

6 Hastings, Hester. *Man and beast in French thought of the eighteenth century. (The Johns Hopkins Studies in Romance Literatures and Languages,* XXVII.) Baltimore, 1936, p. 247 and n.2. This note gives additional sources of information not referred to here.

7 Rousseau, J. J. *Oeuvres,* Hachette, II, Emile, ii, p. 533; quoted by Hastings, *op. cit.,* p. 260.

8 *Statutes at Large,* 5 Henry VIII, c 6; quoted by Kaye, *loc. cit.*

9 *Report of the Royal Commission on the practice of subjecting live animals to experiments for scientific purposes.* London, 1876, § 1287, p. 64.

cepted as a matter of common knowledge. Like Mandeville's statement of a century-and-a-half before, it was something "everybody knows."

Perhaps it is not necessary to labor the point that prejudices of the kind described have played some part in the history of the antivivisection movement. Surgeons, and likewise physiologists, were popularly classified with butchers: all were known to have unavoidably blood-stained hands, and all were darkly suspected to have hearts of adamant.

LLOYD G. STEVENSON

A Report of a Case of Gunshot Wound of the Chest by John Hunter and Others

The accompanying illustration is a reproduction of a document that was among those of the Loudoun collection of manuscripts which, in greater part, were obtained for the Library of the Royal College of Surgeons of England in the year 1934[1]. This item together with several others came by chance into my hands during the year 1935. The manuscript consists of a folded sheet of paper (making a two-leaf gathering), measuring nine by seven and a quarter inches. On the reverse of this document are to be found these notations: "The Opinion of the Gentlemen who attended Mr. Muller" and "Re March 11, 1763 Palhoram." The main portion of this document, spread on the first page, is a signed report of the cause of death of Mr. Muller, which is written in neat script (apparently the handwriting of William Maddox, one of the signers). This reads as follows:

The Opinion of the Gentlemen who attended Mr. Muller in the time of his illness, and were present at the Opening of his Body after Death. When living his Complaints were such as seemed to arise intirely from the Wound that he had received, and he died of those Complaints.

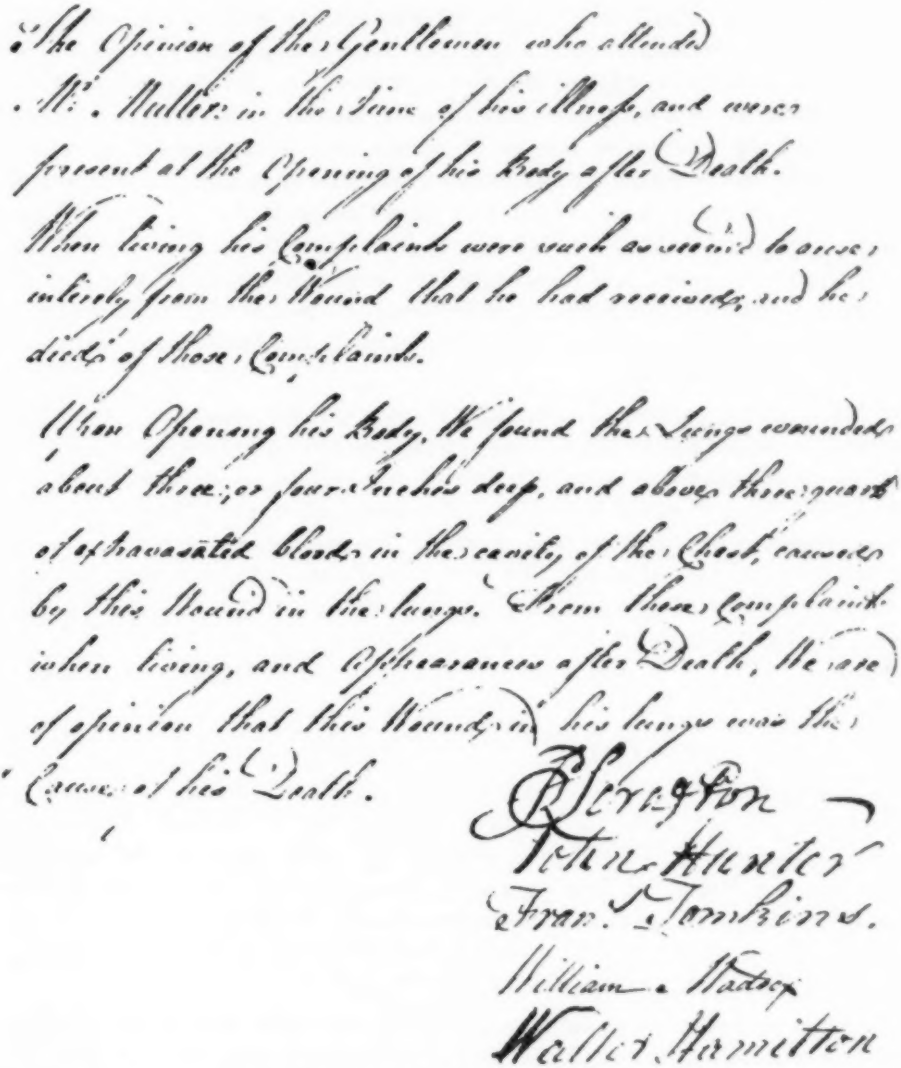
Upon Opening his Body, We found the Lungs wounded, about three, or four Inches deep, and about three quarts of extravasated blood in the cavity of the Chest, caused by this Wound in the lungs. From these Complaints when living, and Appearances after Death, We are of the opinion that this Wound in his lungs was the Cause of his Death.

[Signed] R. Scrafton
John Hunter
Frank Tomkins
William Maddox
Walter Hamilton

Mr. Muller died, it seems, from a penetrating wound of the chest wall involving the lung, as certified to by the "Gentlemen" who signed the report. All but one of them are easily identified. John Hunter is well known to have been one of the three surgeons on the "List of Officers of the Hospital Appointed to Attend the Forces in an Expedition to Portugal." William Maddox and Francis Tomkins were the other two surgeons, and

[1] Gask, G. E. John Hunter in the campaign in Portugal, 1762-3. *Brit. J. Surg.*, 1937, *24*, 640-668.

Walter Hamilton was one of the two apothecaries. But who was the individual whose signature heads the five on the report? Perhaps one of the *Journal's* readers may be able to give this information. This signature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R Scrafton
John Hunter
Fran.s Tomkins.
William Wadop
Walter Hamilton

A report of a case of gunshot wound of the chest by John Hunter and others.

could not at first be deciphered, but after study it was decided that the name was R. Scrafton. But who was Scrafton? No individual of that name could be found among the references consulted. Professor Gask did not mention him and it was thought that he might have been an army chaplain or some other non-combatant. W. R. Le Fanu, Librarian of the Royal College of Surgeons of England, having been consulted, answered: "I can-

not find the name of Scrafton, or any similar name, in the examination book of the Company of Surgeons at that period, nor does it appear in *Johnston's Roll of the Army Medical Service.* I have made some search in the Loudoun papers, but cannot find the name in them either."

In order to identify Mr. Muller, who apparently died in the early part of March 1763, we consulted *A List of the General and Field Officers, in the Several Regiments of Horse, Dragons and Foot, on the British and Irish Establishments.* A Lieutenant John Muller was listed for the years 1758, 1761 and 1763, but not in 1765 or thereafter. During these years he held a commission in the Thirtieth Regiment of Foot. Turning to the *Dictionary of National Biography* it was found that John Campbell, Fourth Earl of Loudoun (1705-82), held the Colonelcy of the Thirtieth Regiment from the year 1749 to 1770 and had been appointed second in command under Lord Trawly of the British troops sent to Portugal in 1762. With this coincidence of data it may be presumed that Lieutenant John Muller was the "Mr. Muller" in the report.

It might be mentioned that John Hunter became interested during the later years of his life in the recovery of persons with gunshot wounds of the lungs, and perhaps this case was one of the earliest of its kind to be observed by him. Everard Home in a communication to A Society for the Improvement of Medical and Surgical Knowledge reported a case of Hunter's under the title of "The Case of a Person who was Shot through the Lungs and survived for Thirty Years; with an account of the Appearance of the Contents of the Thorax after Death."

FENWICK BEEKMAN

Martin Barry, Quaker Microscopist, 1802-1855

Readers of the JOURNAL are not likely to see a remarkably interesting paper on Martin Barry, a Quaker physician, by J. Monroe Thorington which appeared in *The Alpine Journal* for May, 1953. A distinguished microscopist, Barry was also an ardent Alpinist and the fifth medical man to ascend Mont Blanc, having been preceded by Paccard, the village doctor of Chamonix; two Americans, Howard and Van Rensselaer; and Edmund Clark, an English physician who died young.

Barry was born in Hampshire in March, 1802, and had his early education at Edinburgh, taking his M.D. degree there in 1833. In the following year, with his brother, J. T. Barry, he began climbing in the Swiss Alps. In September of that year he successfully achieved the summit of Mont Blanc and shortly thereafter published a lucid account on the physiological difficulties encountered in exercising at altitude, "On dyspnoea and other sensations experienced on the summit of Mont Blanc" (*Proc. roy. Soc. Edinb.*, 1832-44, p. 129). His histological interests took him frequently to Germany where he studied embryology with Tiedemann at Heidelberg and general histology with Theodor Schwann and Rudolph Wagner at Erlangen.

Shortly before his death he visited Prague where he worked with Purkinje. He also visited Breslau, and later Giessen where he spent some time with Liebig. The Chair of the Institutes of Medicine (physiology) at Edinburgh fell vacant in 1848, and Barry was the logical candidate but being a Quaker he was obliged to decline because he would not subscribe to the Thirty-nine Articles.

Barry's outstanding discoveries were the segmentation of the yolk of the mammalian ovum and the penetration of spermatozoa within the zona pellucida, all this before the advent of modern staining methods. He continued his investigations until the week of his death which occurred on 27 April 1855.

J. F. F.

A Jewish Prayer for the Doctor

Dr. Morton J. Robbins, President of the American Physicians Fellowship Committee, Inc., has drawn our attention to a prayer which he found in one of his father's books, *Sefer Hachayim* (Book of Life) by Abraham Joshua Heshil, ben Rabbi Juda Gershon Dracker, printed in Lemberg (Lvov) "in the year 5623 to the creation (1864 A.C.)." The prayer, which was also printed in the *American Physicians Fellowship Committee News,* begs for the success of the doctor's acts, "and that God should supply him with the right and effective medicines," and help him "know and understand the medicines in order to heal with no error, causing no damage. . . ." We reproduce the prayer below:

May it be Thy will, oh Lord my God, to send Raphael the angel to assist me in healing the sick of Thy people. Provide me with the effective drugs necessary for every sickness and every wound, and render all my actions successful. Guard the expressions of my mouth not to err in any way, for Thou has the power to give life to the dead and to heal every sickness and wound, for Thou art the Merciful, Faithful, Healing God and King, as Thou hast said: "For I am the Lord your Healer." And it is written: "I have smitten and I shall heal." He will smite and his hands will heal, for there is no healing like Thine. And I, Thy servant, rely upon Thy sacred precepts to fulfill Thy mission, as it is written: "And He shall heal." Thou hast permitted doctors to heal the sick of Thy people and hast created all kinds of herbs, remedies, medicines and all sorts of drugs, to heal with them every sickness and every wound. Therefore Thy servant finds it proper to pray to Thee to supply him with true and effective medicines, for Thou art the eternal Source of Knowledge and it is not within my capacities and my faculties to know and understand the essence of the science of drugs unless Thou implant in my heart and in my mind the true understanding and comprehension of medicines to heal each person without error or causing damage—quickly, gently, and without grief like water quenching a fire, or like pulling out hair from milk—in every case seasonal or climatic ailments, or even those bitten by a vicious bee or scorpion. As Thou cured Miriam of her leprosy, and Naaman of his leprosy, and Hezekia of his sickness, so send Thou through me true healing to all those who await and hope for Thy help and healing. And purify my thoughts so that I shall not

entertain any improper inclinations in the treatment of women, whether virgin or married, for I have acted according to Thy Word by which man should live, and it is written: "Now is the time to act in God's behalf for his teachings have been violated," for nothing must stand in the way when life is in danger. And Thou, oh Lord, who examines all hearts and knows all thoughts, know that my desires and intentions are all toward Thy great and Holy Name, to fulfill Thy wishes. Guard me, therefore, and purify my thoughts that I may not sin and that I may cure everyone completely with Thy help. And if it should be that my patient's demise approaches, cause no evil rumor about me that it was I who brought about his death, but let them accept the righteousness of Thy judgment, and keep me from stumbling or being endangered by anyone, and as is written: "He who observes Thy commandments will know no evil," and grant me grace, favor and mercy in Thine eyes and in the eyes of all onlookers, and may Thy favor and truth not forsake me for ever and ever. Amen.

Polish Publications on the History of Medicine

Some months ago the Editor addressed an enquiry to Professor Dr. E. Herman, Narutowicza 75-b, Lódz, Poland, asking for information about publications bearing on the history of medicine that had appeared in recent years in Poland. Professor Herman obligingly sent a highly useful, interesting list, but since the titles were in Polish, we sought the assistance of Mr. Leon Nemoy of the Yale University Library, who has translated them into English, and we publish the English versions herewith. Attention is especially directed to the two general histories of medicine, published in 1935, by Wladyslaw Szumowski and Ludwik Zembrzuski.

An additional list of material from Dr. Herman relating to medical history which carries the subject through 1952 is on file in the JOURNAL office for anyone who may wish to peruse it, but it is too long for publication here.

BARTKIEWICZ, BRONISLAW. The principal school [= University] of Warsaw, 1862-1869. Volume II: the Imperial and Royal Medico-Chirurgical academy of Warsaw, 1857-1862, and the Medical Department of the Principal school of Warsaw, 1862-1869. Krakow, W. L. Anczyc, 1901. 569 pp.

BEDNARSKI, ADAM. History of oculistics in Poland, 13th-18th centuries. Lemberg, Society of sciences, 1928. 116 pp.

BEDNARSKI, ADAM. Materials for the history of Polish medicine in the 14th-15th century, *in:* Transactions of the Commission for the history of medicine and natural and mathematical sciences of the Polish academy of sciences, vol. I. Krakow, 1940/1939, pp. 25-108.

BEDNARSKI, ADAM. Oculistics in Polish herbaries of the 16th and the beginning of the 17th centuries. Lemberg, Society for the encouragement of Polish science, 1917. 38 pp.

BILIKIEWICZ, TADEUSZ. Jan Jonston, 1603-1675, his life and activity as a physician. Warsaw, Mianowski fund, 1931. 233 pp.

CHODZKO, WITOLD. Polish health legislation in its historical development. Warsaw, 1917. 52 pp.

FRITZ, JÓZEF. Medical books in Lemberg libraries of the 16th-17th centuries. Lemberg, "Polish press," 1928. 31 pp.

GIEDROYC, FRANCISZEK. The medical council of the Duchy of Warsaw and the Kingdom of Poland, 1809-1867. Warsaw, 1913. 766 pp.

GIEDROYC, FRANCISZEK. The health service in the old Polish army. Warsaw, Sanitary department of the Ministry of the army, 1927. 549 pp.

GIEDROYC, FRANCISZEK. Notes on the history of hospitals in old Poland. Warsaw, P. Laskauer, 1908. 132 pp.

GIEDROYC, FRANCISZEK. Bio-bibliographical sources for the history of medicine in old Poland. Warsaw, 1911. 942 pp.

LACHS, JAN. Medical book-collections in Krakow in the 17th century. Lemberg, Society of sciences, 1930. 133 pp.

LACHS, JAN. Chronicle of Krakow physicians to the end of the 16th century. Contributions from archives. Krakow, Academy of sciences, 1909. 88 pp.

LACHS, JAN. Chronicle of Krakow physicians of the 17th century. Posen, Posen society of friends of science, 1929. 79 pp.

NAMACZYNSKA, STANISLAW. Chronicle of elementary calamities in Poland and neighboring lands in the years 1648-1696. Volume I: meteorological phenomena and plagues. Lemberg, 1937. 114 pp.—Volume II: Chronicle of elementary calamities, 1648-1696. 234 pp.

POLISH ACADEMY OF SCIENCES. Transactions of the Commission for the history of medicine and natural and mathematical sciences. Volume I. Krakow, 1940/1939. 124 pp.

RIABININ, JAN. Physicians in the town-books of the Lublin province in the 16th-18th centuries. Lublin, City Council, 1933. 36 pp.

RUDZKI, STEFAN. Sketch of the history of military hospitals in Poland. Warsaw, 1927. 144 pp.

SOKOLOWSKI, ALFRED. Medical propedeutics. Introduction to medical science, with particular reference to the history of Polish medicine. Warsaw, M. Arct, 1920. 270 pp.

SZUMOWSKI, WLADYSLAW. Galica viewed from the standpoint of medicine, under Jedrzej [= Andrew] Krupinski, the first protomedic, 1772-1783. Lemberg, Society for the encouragement of Polish science, 1907. 367 pp.

SZUMOWSKI, WLADYSLAW. The Krakow medical school after the reforms of Kollataj. Krakow, Society of friends of the history and antiquities of Krakow, 1929. 295 pp.

WACHHOLZ, LEON. The medical faculty of the University of Krakow and its instructors, 1364-1918. Krakow, The council of the Medical faculty, 1935. 74 pp.

ZEMBRZUSKI, LUDWIK. Sketch of the history of Polish military surgery. Warsaw, Army Sanitary Council, 1919. 233 pp.

ARCHIVES OF THE HISTORY AND PHILOSOPHY OF MEDICINE [= Unesco list, no. 648?]. Volume I-XIX. 1924-1948.

KOSMINSKI, STANISLAW. Dictionary of Polish physicians. Warsaw, 1888. 664 pp.

JAKUBOWSKI, MACIEJ LEON. Sketch of the history, literature, and institutions of pediatrics. Krakow, University press, 1865. 52 pp.

LIPINSKA, MELANIA. Histoire des femmes médecins depuis l'antiquité jusqu'à nos jours. Paris, G. Jacques, 1900. 586 pp.

WEIGEL, JÓZEF. History of medicine in the Middle Ages. Lemberg, Seyfarth & Czaykowski, 1895. 276 pp.

ZIELENIEWSKI, MICHAL. Contributions to the history of obstetrics in Poland. Warsaw, 1857. (Reprint from: Memoirs of the Warsaw Medical Society). 70 pp.

ARNOLD, JERZY CHRYSTIAN. De monumentis historiae naturalis Polonae literariis usque ad finem saeculi decimi sexti editis. Varsaviae, Typis Scholarum Piarum, 1818. 88 pp.

BETKOWSKI, NIKODEM. Historia medicinae in inclytis Poloniae terris ab antiquissimis temporibus usque ad annum 1622. Vindobonae, 1841. 38 pp.

BIELINSKI, JÓZEF. The state of medical science in the times of the Medico-Chirurgical academy in Wilno, described bibliographically. Warsaw, Warsaw Medical society, 1888. 907 pp.

GASIOROWSKI, LUDWIK. Collection of notes on the history of the art of medicine in Poland from the earliest times to the present. Volume I-IV. Posen, Published by the author, 1839-1855. 390 pp.

MAJER, JÓZEF. Sketch of the progress of medicine, or the influence upon it of works in Polish, or by Poles, published in the last three years. Krakow, S. Gieszkowski, 1840. 189 pp.

ROSTAFINSKI, JÓZEF. Medicine at the Jagiello University in Krakow in the 15th century. Krakow, Published by the author, 1900. 95 pp.

SZUMOWSKI, WLADYSLAW. History of medicine. Krakow, 1935.

ZEMBRZUSKI, LUDWIK. History of Philosophico-medical systems, theories, and doctrines. Warsaw, 1935.

The Malloch Room

In the *Bulletin of the New York Academy of Medicine* for March 1954, the Librarian, Miss Janet Doe, makes the welcome announcement that the Rare Book Room of the Academy, in which Dr. Malloch, the late Librarian, had had such an abiding interest, is to be named in his honour. Miss Doe recalls that "when the Academy was seeking a new librarian in 1925, it so happened that a young Canadian doctor was free and willing to make librarianship his life-work. Dr. Archibald Malloch, filled with Oslerian enthusiasm for medical history and its literary record, entered upon his new duties just when the Academy was expanding its services and about to move from 43rd Street into its new building on 103rd Street." Miss Doe then records how on 6 June 1928 the Council was able to purchase the bulk of the Edward Streeter Collection which became the chief nucleus of the Academy's rare book collection and how in May 1931 the Academy's Director, Dr. Linsly R. Williams, was able to wire Dr. Malloch: "Four hundred thousand fund completed. . . . Your rare book room assured." The use of the rare book room steadily increased during Dr. Malloch's lifetime and so, as Miss Doe records, "Dr. Malloch's dream of a center where the early literature of medicine and the tools for its study may be readily accessible to all who are interested, in furtherance of his belief that a knowledge of medicine in the past may help to solve its problems of the

present. Because it was his original conception and the core of his endeavor during twenty-three years of librarianship, it is fitting that it should be called after him, the Malloch Room."

Rosenbach Fellows in Bibliography

Dr. Charles W. David, Director of Libraries at the University of Pennsylvania, has announced that the next three Rosenbach Fellows are to be Fredson Bowers for 1953-54, Dorothy Miner, Director of the Walters Art Gallery in Baltimore, for 1954-55, and John H. Powell of Philadelphia for 1955-56.

Professor Bowers, who occupies the Chair of English at the University of Virginia, has chosen as the general title of his series of lectures, "On Editing Shakespeare and Other Elizabethan Dramatists." He will speak on the following topics:

21 April 1954—The nature of the texts and their problems.
28 April—The functions of textual criticism and bibliography.
5 May—The method, form, and content of the critical edition.

Dr. Bowers is nationally known as the leading exponent of the systematic and scholarly tradition of descriptive bibliography begun in England by W. W. Greg and Ronald B. McKerrow. He is the author of numerous articles on bibliographical and textual problems and of the book, *Principles of bibliographical description* (Princeton, 1949). He is presently at work on a bibliography of Restoration drama.

Cambridge Medical History Club

Dr. Arthur Rook of Cambridge, England, writes that a medical history club has been formed in Cambridge, and it plans to meet at regular intervals. It seems highly appropriate that Cambridge should have such an organization in view of its great tradition in medicine, beginning with John Caius, and in more modern times claiming such men as Sir Clifford Allbutt and Sir Humphry Rolleston, both Regius Professors of Physic. The new club will no doubt have the support of the present Regius, Sir Lionel Whitby, whose recent published writings contain many illuminating references to the history of our profession.

Institute of the History of Medicine, Prague

In a recent communication from the eminent neurologist, Dr. Kamil Henner of Prague, we learn that the medical faculty of Charles University in Prague has a modest chair of the History of Medicine. The incumbent is Dr. Miloslav Matousek, Katerínská 32, Institute of the History of Medicine, Prague 2, Czechoslovakia. Dr. Matousek has promised to send us books and papers bearing on the history of medicine in his country, and these will be available to any persons interested in the subject.

The Society for the History of Medical Science, Los Angeles

The Society for the History of Medical Science, Los Angeles held its Winter meeting on 1 March. The address of the evening, "Early Days of Scottish Medicine," was given by Dr. Douglas Guthrie, F.R.C.S.E., F.R.S.E., Lecturer in Medical History at the University of Edinburgh, and Honorary Librarian of the Royal College of Surgeons of Edinburgh. The last meeting of the year was held on April 8th when Dr. René Jules Dubos of the Rockefeller Institute for Medical Research spoke on the "History of the Concept of Specific Etiology—Tuberculosis and Plague from Early Days."

Deutsche Vereinigung für Geschichte der Medizin, Naturwissenchaft und Technik e. V.

The Deutsche Vereinigung für Geschichte der Medizin will hold its annual meeting in Sigmaringen, Germany on 24-27 September immediately after the XIVth International Congress of the History of Medicine at Rome and Salerno. Dr. Gernot Rath, Medizin Historisches Institut der Universität, Bonn (22c), Germany, is Secretary of this German association of the history of medicine.

Wilmer Cave Wright, Ph.D., 1865-1951

The March number of the *Bulletin of the New York Academy of Medicine* contains a fine tribute by Haven Emerson to Mrs. Wilmer Cave Wright to whom medical students and historians owe a great debt of gratitude. Following her graduation from Girton College, Cambridge, in 1892 Mrs. Wright had come to America as a Fellow in Greek at Bryn Mawr College, and from 1897 until her retirement in 1933 she was a member of the College faculty.

It was not until 1927 that Mrs. Wright took up her new career as medical translator and interpreter, but in the course of the next twenty-four years she produced three volumes for the Academy's History of Medicine Series which make available in English as well as in the original Latin the texts of important medical landmarks together with her forceful and highly readable commentaries. Fracastoro's *De contagione* appeared in 1930, Ramazzini's *De morbis artificum* was published in 1940, and Lancisi's *De aneurysmatibus,* the manuscript of which was given to the Academy only a few months before her death, bears the date of 1952. Dr. Emerson comments thus on her writing:

> Swiftly she seized the spirit of those distinguished clinicians and gave them background and citizen, religious and political characteristics. Their loyalties, controversies, correspondence with the best minds of their times roused her concern and respect and their portraits in their own words are as revealing as are the engravings of their features.

A gracious lady, a talented scholar, and a wise teacher, Wilmer Cave Wright has left a rich heritage of her four score and six years.

Yet Another Note on the Tombstone of Thomas Hodgkin

The JOURNAL always welcomes correspondence on any particular theme of general interest to medical historians, and the tomb of Thomas Hodgkin has evidently become something of a *cause célèbre*. Thanks to Dr. E. M. Bluestone, who was Director of the Hadassah Medical Organization and attended the pilgrimage to Hodgkin's grave on 5 May 1927, we have further details amplifying the account of Dr. Salem Rabson and correcting him on several points (*J. Hist. Med.*, 1954, *9*, 117-8). Dr. Bluestone permits us to publish the following comments from his letter of 10 February and the accompanying photograph.

The publication of the photograph of the tombstone of Dr. Thomas Hodgkin in the October 1953 issue of the JOURNAL brought back intimate memories to me. I have a photograph of my own which places the tombstone in a somewhat wider setting, and I do indeed recall vividly the circumstances under which it was taken. I was director of the Hadassah Medical Organization in Palestine at the time and was associated with the late Dr. Emanuel Libman when the pilgrimage to Hodgkin's grave was organized.

For the sake of historical accuracy I am prompted to write you at this time because of the item entitled "A Further Note on Thomas Hodgkin's Gravestone" which appears on page 117 of the January issue of the JOURNAL. In this item you quote Dr. Sam Rabson of Fort Wayne, Indiana, whose comments on the subject need correction and amplification.

During the course of his visit to Palestine, Dr. Libman told me of his desire to see the grave of Dr. Hodgkin. We journeyed there and it was his idea that we organize a pilgrimage in memory of this great physician and friend of Sir Moses Montefiore. Dr. Hodgkin was a distinguished philo-Semite, who accompanied Sir Moses on several of his humanitarian pilgrimages. Hodgkin, as we all know, died in the Holy Land and was buried in the Protestant Cemetery of Jaffa. The bare facts are recorded on the tombstone (a photograph of which appeared opposite page 456 of the October 1953 JOURNAL) in the following words:

Here rests the body
of
Thomas Hodgkin, M.D.
of Bedford Square, London,
a man distinguished alike
for scientific attainments
medical skill
and self-sacrificing
philanthropy
died at Jaffa
the 4th of April 1866
in the 68th year of his age
in the faith and hope of the Gospel
This epitaph is inscribed by his
deeply sorrowing widow and brother
to record their irreparable loss.

There is a second inscription on another side of the shaft which reads as follows:

This tomb is erected by
Sir Moses Montefiore
Bart.
in commemoration of
a friendship of
more than 40 years
and of many journeys
taken together in Europe
Asia and Africa.

We found this beautiful monument in an excellent state of preservation, and certainly there was no occasion for anyone to be "shocked at the condition of both grave and stone." Dr. Libman was, as your correspondent states, an energetic man, but there was no need for him to cable American friends on this score, or to secure funds, or personally "to supervise the installation of a new stone."

The pilgrimage took place on May 5, 1927, two years before your correspondent visited the Hadassah Hospital in Jerusalem and not in 1929, as he states. A small but distinguished group of Christian, Moslem and Jewish notables were present. Dr. Libman read a short appreciation from manuscript, laid a wreath, and, with the rest of us, posed for several pictures. Three of these have been in my possession ever since.

Ohio Academy of Medical History

A meeting of the Ohio Academy of Medical History will be held at one o'clock on 1 May 1954, in the Ohio State Museum, Columbus, Ohio.

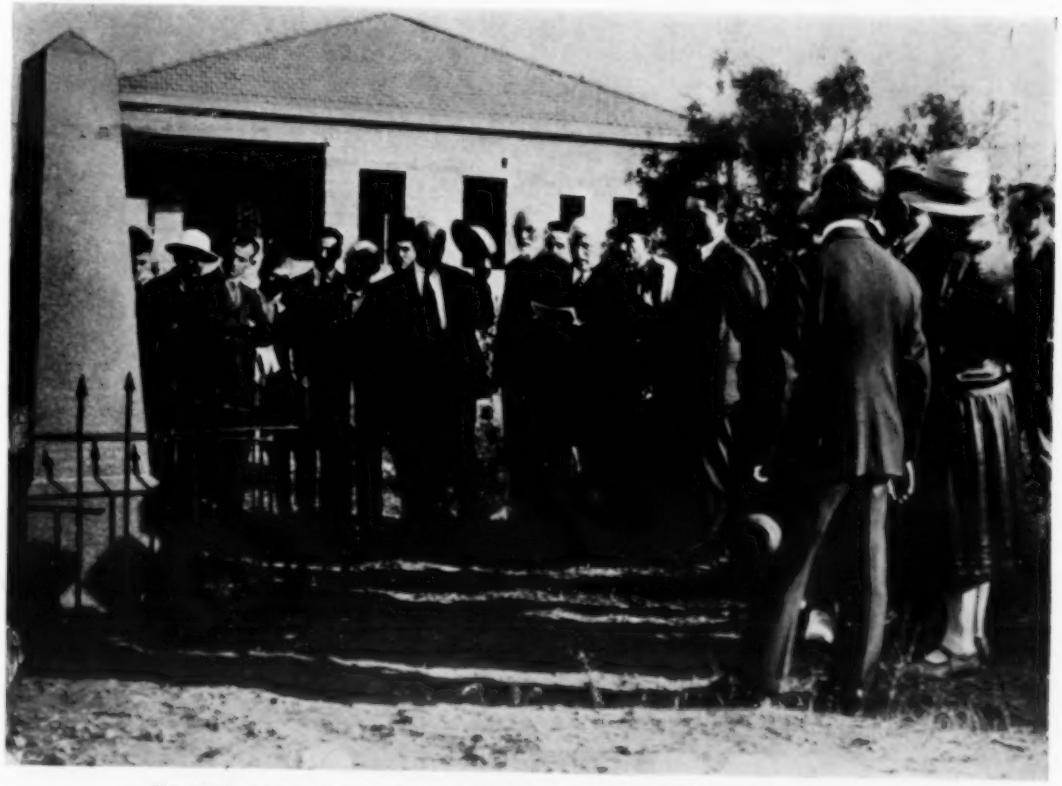
PROGRAM

1. Adolph Waller: "An Ohio Physician Botanist"
2. H. H. Fertig: "Some Letters of Jared Potter Kirtland"
3. Robert Preston: "Comparison of the Text of Noah Worcester and that of Robert Willan"
4. A. T. Bunts: "Leaves from an Ohio Doctor's Scrap Book"

INTERMISSION

5. Business Session
6. Howard Dittrick: "A Still Life Painting Depicting Interests of a Cleveland Physician of the Nineties"
7. Leon Goldman: "Bell's Palsy in Ancient and Modern Art"
8. C. D. Selby: "Ohio's Contribution to Industrial Medicine"
9. H. D. Piercy: "Shaker Medicine"

Howard Dittrick, M.D., is President of the Academy, John O. Marsh, Secretary-Treasurer.



Dr. Libman giving memorial address at Hodgkin's grave in 1927.

Meeting of Society of Neurological Surgeons at the Neurological Institute, New York City, December 1929

Left to right *standing*: Byron Stookey, Wilder Penfield, Harry Kerr, Loyal Davis, Samuel Harvey, Kenneth Mackenzie, Max Peet, Charles Bagley, Carl Rand, Ernest Sachs, Jay Keegan, Jason Mixter, Charles Dowman, Francis Grant, Winchell Craig.

Left to right *sitting*: Charles Elsberg, Charles Frazier, Howard Naffziger, Harvey Cushing, Alfred Taylor.

Resignation of Mr. W. J. Bishop

Mr. W. J. Bishop has resigned from the post of librarian of the Wellcome Historical Medical Library in order to take up private work as a consultant in medical bibliography and historical research. His address is now: Tavistock House (South), Tavistock Square, London, W.C. 1.

Mr. Bishop has been succeeded in the librarianship by Mr. F. N. L. Poynter, formerly Assistant Librarian.

Congratulations to Howard C. Naffziger

The JOURNAL takes this opportunity to extend its warm-hearted congratulations to Howard Christian Naffziger, Emeritus Professor of Neurological Surgery and member of the Board of Regents of the University of California, on his seventieth birthday which falls on 6 May. With its felicitations the JOURNAL publishes a photograph taken in 1929 at a meeting of the Society of Neurological Surgeons in New York in December 1929 where many of the leaders of American neurosurgery were present. Dr. Naffziger, whose career has centered around the University of California where he took his M.D. degree in 1909, has long been interested in the history of neurosurgery.

Dr. Lloyd G. Stevenson Goes to McGill

McGill University has just announced that Dr. Lloyd G. Stevenson of the University of Western Ontario, one of the members of the Editorial Board of this *Journal,* has accepted the appointment of Associate Professor of the History of Medicine at McGill, as of 1 July 1954. Dr. Stevenson will also be the Honorary Librarian of the McGill Medical Library and will serve as Assistant Librarian of the Osler Library.

Twenty-fifth Anniversary of the Osler Library

It seems difficult to realize that a quarter century has passed since the Osler Library at McGill officially opened its doors on Wednesday, 29 May 1929. Dr. William Sidney Thayer of Johns Hopkins gave the chief address; the Library was formally dedicated by Mr. H. S. Osler of Toronto representing the family, and accepted on behalf of the University by Sir Arthur Currie, G.C.M.G., the Principal. The *Journal* wishes to congratulate the Library on its twenty-five years of distinguished service to medical history and to the perpetuation of the ideals which Sir William had envisioned in bequeathing the great collection to his alma mater. Those who know the Library realize that this has been made possible through the knowledge and devotion of Dr. W. W. Francis who had grown up with the Library since Sir William's early days of collecting in Baltimore and who was responsible for editing and publishing the *Bibliotheca Osleriana,* issued in 1929 in time for the Dedication.

Book Reviews

SIR CHARLES SHERRINGTON. *Man on his Nature.* Cambridge, Cambridge University Press, 1951. 300 pp. $6.00.

Reviewed by LLOYD G. STEVENSON, *Associate Professor of Medical History and Literature, University of Western Ontario, London.*

THIS is the second edition, enlarged by adding a chapter on "Altruism," and somewhat revised in other ways, of a book which has been hailed as a modern classic, and also, more extravagantly, as "one of the landmarks in the history of man's speculation." It is essentially a philosophical treatise, the expression of a biologist's reasoned faith. This philosophy is expressed through a detailed exploration of old and new opinions on the relation of mind and brain, and thereanent on the origins of life. Despite the great variety of material employed, there are few digressions from this theme and no irrelevancies. It is therefore an unjust and violent act to rend this organic unity into three parts, philosophy, history, and "science writing," particularly since the philosophy will be left to philosophers to judge; but if Sherrington found it convenient to study the decerebrate cat, the reviewer of his complex treatise may also choose to exclude and discriminate, leaving out what doubtless matters most in order to deal with what is chiefly relevant to his purpose here.

Sherrington's writing has been much admired. He fashioned his prose with fine authority. It is direct, clear, brisk, and even snappish. This is the sort of talk we expect from the imperious elder statesman whose quenchless energy burns through the mask of age in Allan Chappelow's magnificent camera portrait which forms the frontispiece of the book. Even the poetry is staccato. "The old Walpurgis night is over; its company is disbanded; its votaries are fled, its dance will never be resumed; its festival has lapsed, because deserted. The half-gods are not only vanished, they are nigh forgotten; matter for labels and a museum shelf." "The planet in travail with its children. With the Universe as heroic background for what to us is an intimate and an heroic epic. A birth in cataclysm. Aeons of seething and momentous shaping. A triple scum of rock and tide and vapour—the planet's side—swept on through day and night. Then from that side arising shape after shape, past fancy." Not the writing alone, but the thought itself, is thus infused with passionate zest; and just as the last quotation seems to me too close to the form of verse not to break the fact-finding mood of prose, so the thought seems now and again to involve itself in this peremptory poetical vision; we are swept, protesting, to the rainbow's end, and puzzled as to how we got there. A little patience and all is explained. Dobbin may then jog along equably for half a dozen pages but is always ready to assume wings and launch into space as Pegasus. The rider-reader must be ready at any moment for a jump, a flight, and a landing on a star. The sights to be seen are frequently glorious, but the pace is a little unnerving.

In revising *Man on his Nature,* Sherrington condensed certain passages, improving the expression of each, but in two or three cases, at least, making the "take-off" still more abrupt. No doubt it is captious to complain in this way of writing which is tightly, sometimes brilliantly, contrived, and which yet keeps up, perhaps nine times in ten, the manner of cultivated talk. It is a distinctly personal style, and a very serviceable one; its fancier bits, too, have their place and purpose. One becomes accustomed to the changes in pace.

Sherrington drew the materials for his talks (these chapters were originally Gifford lectures) from contemporary science and from the history of thought wherever they touched his theme; on these foundations he constructed his personal thesis. The expositions of modern biological science are without exception admirable. Among physiologists who follow paths blazed by Sherrington I have heard the complaint that his papers are not always, in matters of detail, as precise or as specific as they could wish, and it is my own, possibly philistine, opinion, that the great *Integrative Action of the Nervous System* is needlessly cryptic; but here the "science writing" is of quite another kind and is superbly good, not only in expounding neurophysiology but in explaining such things as the embryology of the eye or the life history of the malaria parasite, subjects beyond the author's own research experience. Such passages as these make up a part of every chapter. They are lucid and lively, a pleasure to read. This result is achieved without vulgarization or "talking down," a memorable, if minor, triumph.

Sherrington had the same easy familiarity with his sources in history, particularly "our friend, Fernel." From Galen to Thomas Willis to Whytt and Sömmerring, from Aristotle to Whitehead, what has been thought and said about mind and nervous system is reviewed with sympathetic insight and without that hectoring omniscience with which the modern investigator sometimes treats his forebears; this, I think, more than compensates for debatable interpretations. There are six or seven references to Plato and a comparatively full discussion of the opinions of Descartes. Quite properly, the chief place among philosophers is reserved for Aristotle. Less understandably, Aristotle shares this pre-eminence with the physician-philosopher of the sixteenth century, Jean Fernel. Fernel on the mind and the soul, and Fernel on the motor act (unlike Aristotle, he believed that it was not necessarily tied to consciousness) is worth all, or almost all, the minute attention lavished upon him; but when Fernel is brought forward to contribute the view that "innate heat" is ultimately derived from the sun, one wonders why this view should be attributed *particularly* to him; and in the same way one suspects from time to time that this very dear friend of the author's is appearing onstage a little more frequently than the plot demands. Before the original publication of these lectures in 1940, Sherrington was also working on his biographical and bibliographical study, *The Endeavour of Jean Fernel.* That he undertook this task, all students of

Renaissance medicine have reason to be grateful; that Fernel occupies a little bit too much space in *Man on his Nature* was an incidental and accidental consequence. Of course Fernel belongs in the story, which is thus far good; but he is with us late and soon, and the book is thus far eccentric.

The richness—and what I can only call, although with admiration, the crabbedness—of this compact and difficult book will repay the most careful reading. A determinist and a rationalist, Sherrington regarded mind as the "new element" in evolution and rationality as "just a tool for thinking." This led him to an austere vision and a lofty eloquence. An altruistic existentialism, perhaps better called humanism, is here set forth with the fire of imagination and the strength of human dignity.

J. H. G. GRATTAN and CHARLES SINGER. *Anglo-Saxon Magic and Medicine.* Illustrated specially from the semi-pagan text 'Lacnunga.' London, Oxford University Press, 1952. (Publications of The Wellcome Historical Medical Museum, new series, no. 3.) xii + 234 pp., illus., 7 pl. 28s.

Reviewed by MAX H. FISCH, *Professor of Philosophy, University of Illinois, Urbana, Illinois.*

THE pioneer work in this field, published in 1864-66, was *Leechdoms, Wortcunning, and Starcraft of Early England, being a collection of documents, for the most part never before printed, illustrating the history of science in this country before the Norman Conquest,* collected and edited by Thomas Oswald Cockayne (1807-1873) in three volumes of The Chronicles and Memorials of Great Britain and Ireland during the Middle Ages.

This monumental work has long been out of print and is seldom found outside the larger libraries. The student of the history of medicine may also, even when he has a set before him, be hard put to extract from it anything to his purpose. Though Cockayne's Anglo-Saxon scholarship was unsurpassed in his day, he should have had the collaboration of an equally competent and mature historian of medicine to help elucidate his texts in detail and to compose, with his assistance, the chapters of the history of medicine and allied sciences for which these texts are the evidence.

It is now our good fortune to have at hand the results of just such a collaboration. John Henry Grafton Grattan, who died October 22, 1951, was a philologist as able and expert as Cockayne, with the advantage of three-quarters of a century of further progress in Anglo-Saxon scholarship behind him. And it needs no saying to readers of this JOURNAL that Dr. Singer was the ideal historian of medicine to share the enterprise. The collaboration began in the twenties, when they were both on the staff of University College, London, and most of the book was in page proof at the time of Grattan's death.

The volume contains two principal parts, the second of which (pp. 96-205) is a new critical edition, with translation and commentary, of the first text in Cockayne's third volume, the *Lacnunga* ("Leechings" or "Remedies") preserved in British Museum MS. Harley 585, which is datable

about 1000 A.D. The *Lacnunga* is a compilation in which several strata may be discerned—Mediterranean pagan, Teutonic pagan, and Latin Christian—and in which nearly all the characteristic elements of the medical lore of the dark age are well represented. Appended to this second part is an account of the manuscript and of the treatment of the text in this edition, followed by a brief survey of the grammar.

The first part (pp. 3-94) contains "A General Survey of Magico-Medical Practice in Anglo-Saxon England," in which Dr. Singer expertly discriminates and interprets the successive strata and the particular elements of the text, and constructs from it, from Cockayne's other texts and from other available materials, "a picture of the practice and psychology of healing in that age before scholastic method and Arabian learning had wrought their revolution" (p. 12). It is largely due to this introduction that the present volume, though less than one-fifth of the size of Cockayne's work, does not merely provide a great improved edition of this one text and an indispensable guide to the understanding of the others, but actually supersedes the larger work for all purposes but those of the scholarly specialist.

Historians of science have for the most part occupied themselves with scientific progress, or with the movement suggested by the title of one of Dr. Singer's earlier works, *From Magic to Science*. There are all too few studies of the reverse process from science to magic, by which "the science of one age becomes the superstition of the next" (p. 6). With Grattan's assistance, Dr. Singer has cleared for us a vista wherein "we may contemplate the deterioration of rational Greek medicine by contact with folk-elements—Mediterranean, Near Eastern, and Northern—as an incident in a vast cultural movement extending through the ages" (p. 4). Anglo-Saxon medicine, he concludes (p. 94), "cannot . . . be treated . . . as an early stage in what is to become a great intellectual movement. On the contrary it is the last stage of a process that has left no legitimate successor, a final pathological disintegration of the great system of Greek medical thought."

In addition to the historical interest which such a survey might have had for educated readers at any time from the seventeenth century onwards, it takes on for today's reader a peculiar and unintended fascination. What course of cultural deterioration might follow an atomic destruction of the creative centers of modern civilization and a consequent general failure of nerve? If imagination fails us, we may fall back upon this book for many a picturesque and suggestive detail.

ROBERT HERRLINGER. *Volcher Coiter, 1534-1576.* Nürnberg, M. Edelmann, 1952. 147 pp., 27 ill., 7 pl., 1 port. (Band I of *Beiträge zur Geschichte der medizinischen und naturwissenschaftlichen Abbildung.*)

Reviewed by DOROTHY M. SCHULLIAN, *Fulbright Fellow in Italy, 1953-54.*

ON page 58 of this monograph the author, treating of the preface to one of Coiter's works, observes that "Das Vorwort eines Buches kann von grossen Gewicht sein." The statement could be made of his own preface, if only

because there he pleads implicitly for additional bio-bibliographies of sixteenth-century anatomists. Vesalius has had his Roth and his Cushing, Fabrizio his Adelmann, and, one may add, Berengario his Putti. But others have received no such exhaustive investigations, and for a definitive work on Eustachi in particular there is crying need.

With this detailed bio-bibliography and with the forthcoming Dutch-English publication in *Opuscula selecta Neerlandicorum de arte medica,* which will provide an English translation of much of Coiter's text, the man, his life, his works, the circles in which he moved, his place as physician, anatomist, zoologist, and embryologist will have been felicitously and abundantly investigated. Dr. Herrlinger has done his task well. He has combed the previous literature and has added new documents, in particular two from Coiter's Bologna period, another on his teaching at Amberg, further Ratsverlässe which report his activities in the post of Stadtarzt in Nürnberg, his opinion on leprosy, and his regimen for the cure at Wildbad. His career is carefully followed from his native town of Groningen to Brienne in Champagne where at the age of forty-two, while serving Pfalzgraf Johann Casimir on an expedition in support of the Huguenot cause, he met his early death. His four published works are fully analyzed from many points of view and surely to the satisfaction not only of historians of medicine but also of bibliographers, bibliophiles, and students of the history of engraving. Americans who, instead of having "little Latin and less Greek," now seem to have nothing of either can be comforted by the fact that Dr. Herrlinger has thought it prudent to provide for his German readers German translations of Coiter's Latin. There is a revealing treatment of Coiter's iconography, of the *écorché* which he constructed and which as late as 1718 could still be seen in the Stadtbibliothek at Nürnberg, of his coat of arms, and of his importance to the history of medicine. Unfortunately, only one volume, consisting of a Zwinger and a Wecker bound together and preserved in the Universitätsbibliothek at Erlangen, is now known to remain from his library. Dr. Herrlinger ends his monograph with a bibliography of 119 items, to which should be added Elsa G. Allen's account of Coiter in her *History of American Ornithology before Audubon* (*Trans. Amer. Philos. Soc.,* 1951, n.s. *41,* 405-410).

The monograph is furnished with abundant illustrations in the text, with seven clear and full-page plates, and with a colored frontispiece of the Coiter portrait now on loan from the Stadtbibliothek at Nürnberg to the Germanische Nationalmuseum. Three of the documents mentioned above are published in an appendix, and there is a helpful index. The work is handsomely printed on good paper with a minimum of typographical errors. One doubts, however, that a mere author can ever break the conspiracy, to which both German and American printers are tenacious parties, to spell Giuseppe with the *i* and *u* in reverse order.

It may not be amiss to provide here a corrigendum and two addenda to the remarks on Coiter in Volume 6 (1951) of this JOURNAL. Further ex-

amination of Document A.1, f.1, following Dr. Herrlinger's interpretation in *Ärztliche Praxis* (12 Mai 1951, III, Nr. 19), shows that instead of *raris* on p. 188, line 15, the reading is *ranis;* the translation on p. 182, line 4, should therefore be "concocts from green frogs an oil. . . ." This document, a consilium for a Dr. Jugelius, was sent by Coiter to Joachim Camerarius the Younger under date of 5 May 1572. In it there is mention of the fact that Dr. Thomas Erastus had furnished a consilium for the same case. Mr. E. Weil of London informed me in a very kind letter of 21 November 1951 that this consilium of Erastus has been described in his Catalogue 15 (issued May 1950), no. 17, and that it had subsequently been acquired by Dr. Myron Prinzmetal. Dr. and Mrs. Prinzmetal have been exceedingly gracious and generous in corresponding with me on the matter, in sending the document from Beverly Hills to Cleveland for examination and photographing, and in allowing me to cite it here for the Coiter literature. It is in the form of a three-page letter written by Erastus to Coiter from Heidelberg on 7 March 1572. We learn that the patient in question was the jurisconsult Christophorus Fabius Jugelius. Coiter had written to Erastus on the matter on 2 January, but Erastus had been absent in Franconia in February and had received the letter only in March. We are delighted to learn that he received it, if we may take the word *frater* in its most literal meaning, from the hands of Coiter's blood-brother, an individual whose existence was hitherto unknown to us. He forms, in 1572, a link with the Groningen period from which Coiter seemed to have cut himself off so entirely and so strangely when he left his birthplace in 1555. A bio-bibliography of Erastus is the place for fuller discussion of the text of this detailed consilium; suffice it to say here that there is emphasis on the guaiac treatment, with which Coiter is stated to be fully familiar, and that Coiter labelled the letter on the outside and added the date 23 April 1572, scarcely a fortnight, that is, before he referred to it in his own letter to Camerarius. Jugelius, however, followed the advice of neither Erastus nor Coiter.

Finally, it is a pleasure to add to the census of copies of Coiter's works, of which all too few are extant today. Through the kindness of Mr. William R. LeFanu I am informed that the Royal College of Surgeons of England has good copies, but without dedicatory inscriptions in Coiter's hand, of the *Externarum et internarum principalium humani corporis partium tabulae . . .* (Nürnberg, 1572) and the *Lectiones Gabrielis Fallopii de partibus similaribus humani corporis . . .* (Nürnberg, 1575). That mine of riches—the Vatican Library—boasts a copy (Barb. M. X. 55) of the 1572 item sumptuously bound and inscribed in Coiter's hand on the flyleaf, apparently after binding, "Illustrissimo Principi ac Domino Ludovico Duci Bauariae, comiti Palatino Rheni, Palatinatus superioris praesidi Domino suo clementissimo autor Dono"; copies of the 1573 edition (Palatina I. 171.1) of the same title and of the 1575 item (Palatina I. 171.2) united in a magnificent binding whose upper cover bears the initials of the recipient and the date 1575 and whose flyleaf carries the donor's inscription "Il-

lustrissimo Principi Domino Friderico Comiti, Palatino ad Rhenum, Sacri Romani Imperij Electori primario Duci utriusque Bauariae Domino suo Clementinissimo autor dono dedit"; a second, uninscribed copy (Barb. M. X. 61) of the 1573 item; a third copy (Palatina II. 361.4) of it, inscribed by Dr. Achilles Pirmin Gasser at Augsburg on 27 October 1574; and a copy (Palatina II. 361.5) of the very rare *Tabulae externarum partium humani corporis* . . . (Bologna, 1564) which was purchased by Dr. Gasser at Augsburg on 3 October 1567.

L. BINET and P. VALLERY-RADOT. *La faculté de médecine de Paris. Cinq siècles d'art et d'histoire.* Paris, Masson, 1952. 123 pp. 1250 frs.

Reviewed by PERCIVAL BAILEY, *Professor of Neurology and Neurological Surgery, University of Illinois College of Medicine, Chicago.*

THIS is a charming account of the principal events in the development of one of the oldest and most distinguished medical faculties in the world which is just now moving into a new modern building on the site of the old Charité Hospital, of which nothing is preserved but the Chapel.

In 1281 the faculty of medicine received its seal and mace and became a separate body in the University. Its statutes were confirmed in 1331 by Philip of Valois and it elected its first Dean in 1267 (*sic*). Léon Binet is the 235th in direct descent. In 1369 the faculty acquired a modest house in the rue des Rats, today the rue de l'Hotel-Colbert. Previously, the students had been seated on straw thrown into the street now known as the rue du Fouarre. In 1472 the faculty began to build a more pretentious home which was enlarged and remodeled from time to time until it was finally abandoned in 1792. About all that is left of this old center is the anatomical amphitheatre named for Winslow built in 1744 by, and at the expense of, the faculty of medicine, the physicians receiving very little assistance at any time from the government.

Meanwhile, the surgeons had been following a parallel and more successful course. In the thirteenth century the corporation of surgeons had installed itself near the convent of the Cordeliers. At first they also had no building in which to hold their consultations. It was only in 1561 that they finally constructed, with the aid of Pope Pius IV, a modest structure beside the Church of Saint-Côme. In 1616 they built an amphitheatre and, in 1694, a much larger one which seated 125 persons. The latter was necessitated by the union which the surgeons had made with the barbers so that the "surgeons of the long robe and those of the short robe (barbers)" could unite to shake off the domination of the hated physicians. They finally succeeded in this purpose in 1743, at the same time separating themselves from their embarrassing barber accomplices. The old College of Saint-Côme ceased to function in 1775 but the amphitheatre still stands and is used now by the Institute of Modern Languages.

In 1768 Louis XV ordered the construction of a new school and academy of surgery. On April 27, 1775, the amphitheatre was inaugurated. It was

closed on October 20, 1789 at the time of the Revolution and on August 8, 1793 the Convention suppressed the College and Academy of Surgery. The Faculty of Medicine had been suppressed a year earlier. On December 4, 1794 the old separation of medicine and surgery was terminated, the two faculties being combined into one Ecole de Santé. It became the Faculty of Medicine in 1808, became a part of the University and occupied the building which had housed the new school and academy of surgery. Here it remained to the present time, with many additions and alterations, but it had long been inadequate for the increasing numbers of students. For years a suitable location was sought but none could be found until, in 1935, the Hôpital de la Charité was condemned and an addition to the faculty, to house students of the first and second years, was begun. Work was interrupted by the war but the building has finally been completed and opened in October 1953.

All of these matters and many others are charmingly told in this monograph. It is printed on excellent paper and beautifully illustrated. Anyone interested in the history of medicine should read this authoritative story of one of the great medical faculties.

JOHN DUFFY. *Epidemics in Colonial America.* Baton Rouge, Louisiana University Press, 1953. xi + 274 pp. $4.50.

Reviewed by JOHN B. BLAKE, *Research Fellow, Department of the History of Medicine, Yale University School of Medicine.*

THIS book aims to fulfill a definite need for a history of the epidemics and other major infectious diseases of colonial America. The author devotes his attention in successive chapters to smallpox (40 per cent of the text); diphtheria and scarlet fever; yellow fever; measles, whooping cough, and mumps; respiratory diseases; and malaria, dysentery, typhoid fever, typhus, and venereal diseases. Using a variety of source materials—newspapers, diaries, letters, and the records of the Society for the Propagation of the Gospel and of some of the colonial governments—he has dug out a mine of information. Inevitably much of the material is sketchy. Medical writings being scant for the prerevolutionary period in America, the work is necessarily based largely on descriptions by laymen. Diagnosis of colonial epidemics is often a hazardous procedure, and although Duffy has been more conservative in his attempts than some who have written on the period, this reviewer would like to see additional evidence on some epidemics before accepting the author's conclusions. Moreover, statistical material, with the notable exceptions of the smallpox and total mortality records of Boston in the eighteenth century, is generally scant or nonexistent, and the relative mortality of various diseases must be judged largely from personal impressions, a notoriously unreliable guide.

While recognizing that such problems pose limitations, Duffy has concluded that, in the long run, "From the standpoint of social and economic cost, malaria and dysentery rank first among the epidemic disorders affecting

the colonists" (p. 238). Respiratory diseases he ranks next in importance. Smallpox, he notes, caused the most consternation, but it attacked less often and during the eighteenth century variolation mitigated the worst effects. Yellow fever also caused great terror, but outbreaks were even more infrequent and were confined almost entirely to Charleston, Philadelphia, and New York. Duffy believes that typhus was negligible in the colonies and typhoid fever of doubtful effect. There can be little doubt that endemic diseases, such as malaria, dysentery, and pneumonia, caused more deaths than either smallpox or yellow fever, though their relative rank, so far as contemporary evidence shows, is a matter of question. It seems probable, also, that Duffy has discounted typhoid too much. Though he has evidently included malaria within his definition of epidemics (which is never expressly given), he has omitted all mention of tuberculosis, which was surely present.

In attempting to cover the history of several diseases over a period of about 170 years from Georgia to Maine, Duffy has introduced some factual errors and some interpretations with which this reviewer must disagree. He mentions incidentally the Boston smallpox epidemics of 1731 (p. 60) and 1751 (p. 23), though in describing those outbreaks he correctly refers them to 1730 (pp. 52-54, 78) and 1752 (pp. 35, 57). At one point he implies—correctly, I believe—that yellow fever was epidemic in Charleston in 1792 (p. 160), but elsewhere he reports that this disease seems to have disappeared from British North America from 1763 to 1793 (p. 162). He has apparently missed the yellow fever epidemic in New York in 1791 (see especially Jonas Smith Addoms, *An Inaugural Dissertation on the Malignant Fever, Which Prevailed in the City of New-York during the Months of August, September, and October, in the Year 1791.* New York, 1792). His speculations on the possible reasons for the absence of yellow fever in the continental colonies, incidentally, suggest that he is not very familiar with the ecology of the *Aëdes aegypti,* and surely it would be pertinent to his inquiry to know that in 1793 and the following years yellow fever spread through the Lesser Antilles as a disease which had long been absent (see Colin Chisholm, *An Essay on the Malignant Pestilential Fever, Introduced into the West Indian Islands from Boullam. . . .* 2nd ed. 2 v. London, 1801). Elucidation of this problem of the absence of yellow fever from the United States from 1763 through 1790 requires careful investigation of its history in the Caribbean area and of the movement of vessels from thence to American ports.

Elsewhere, Duffy credits William Douglass with being the "most accurate observer" of an epidemic of measles in Boston in 1713 (p. 166), but that worthy first visited the town in 1716. He reports, incorrectly, that Boston went through general inoculations in 1769, 1771, and 1774 (p. 67). At one point he mentions the early Massachusetts quarantine order of 1647 (p. 101), but at another he ascribes it to March, 1648 (p. 140). It was in fact passed in March, 1647 O.S., 1648 N.S. Between 1731 and 1751 Boston

had considerably more than three or four isolated cases of smallpox in March, 1745 (pp. 56-57). Rather than being "no problem" during these years, it was a constant threat requiring the continuing, active vigilance of the selectmen to prevent its becoming epidemic. In connection with the outbreak of 1752, Duffy maintains that the selectmen and the newspapers deliberately played down the seriousness of the situation and complains that "By the end of March the papers gave up the struggle and henceforth paid little attention to the outbreak" (p. 57). Certainly the papers did not sensationalize their early reports, but neither did they hide the presence of the disease, and they printed letters pro and con on the advisability of allowing general inoculation. By the end of March, the selectmen—not the papers—gave up the struggle, not of trying to hide the outbreak, but of trying to prevent its spread, and inoculation was allowed. Once that point had been reached, it was certainly not news to any Bostonian that smallpox was present. Furthermore, it must be remembered that the small newspapers of those days printed very little local news anyway.

Duffy declares that by 1790 inoculation "was strictly forbidden in all the New England states," but that "the laws were usually suspended during smallpox epidemics." Actually from 1776 on, at least in Massachusetts, it was allowed at all times in special hospitals having the approval of local authorities. William Aspinwall maintained such a hospital in Brookline from 1788 until vaccination put him out of business. Moreover, since 1731/32 the laws, by requiring householders to report smallpox cases only if fewer than twenty families were infected, implicitly—and later explicitly—permitted general inoculation whenever an epidemic went out of control. No suspension of the laws was involved. Duffy's brief discussion of quarantine and isolation laws in the colonies (pp. 101-103) also obviously suffers from the fact that he has not looked up the laws. Although Duffy gives almost no attention to the cost of inoculation as a factor in its utilization, he does at one point state, without adducing any but the most general evidence, that it was not beyond the means of the working class (p. 106). The records suggest, however, that inoculation in special hospitals was unquestionably too expensive for all but the well-to-do. Moreover, Benjamin Franklin, in his introduction to the Heberden pamphlet in 1759, pointed out that the cost of inoculation, when performed by a physician, was often more than the "common tradesman or artificer" could afford, and the little book was distributed to teach pople how they might inoculate themselves. It is also pertinent to note that more than 20 per cent of the inhabitants of Boston who were inoculated during the epidemic of 1764 went through the disease under the inspection and care of the overseers of the poor.

As these examples suggest, the basic fault with this book is that the author has tried to do too much. While he has dug out much useful information and many new details, considerably more research is necessary before anyone can write a comprehensive and accurate history of infectious diseases in the American colonies.

CHARLES SINGER. *Science, Medicine and History.* Essays on the evolution of scientific thought and medical practice, written in honour of Charles Singer. Collected and edited by E. Ashworth Underwood. 2 vols., xxxii +563 pp., 50 plates; viii + 646 pp., 56 plates, index. London, New York, Toronto, Oxford University Press, 1953. $45.00.

Reviewed by I. BERNARD COHEN, *Editor of "Isis."*

THE publication of these two magnificent volumes provides an occasion for all who are interested in the history of medicine and the history of science to join with the ninety contributors to Dr. Singer's *Festschrift* in saluting "the doyen of historians of science and medicine in Britain." Dr. Singer's many contributions to these fields in articles and books began in 1911 and have not ceased. The bibliography at the end of these new volumes contains information about three new works in press: a translation with notes of Galen's *De Anatomicis Administrationibus;* a translation of Antonio Benivieni's *De Abditis Nonnulis ac Mirandis Morborum et Sanationum Causis* (with an introduction by Esmond R. Long); and the first volume of the projected five-volume *A History of Technology* (edited by Charles Singer and E. J. Holmyard).

Born on 2 November 1876, Dr. Singer studied zoology and then medicine. He dates "his practical interest [in the history of medicine] to an evening in the late summer of 1910, when he picked up for a few pence in Church Street, Kensington, a copy of Benjamin Marten's *New Theory of Consumption.* He was entranced to find that Marten had anticipated the germ theory. The papers which Singer wrote in 1911 on this work were his first historical writings."

The constant streams of historical publications from 1911 to the present have covered almost every aspect of the history of science and medicine, including general books on the history of medicine and of science, the history of biology and of comparative anatomy, and Greek science. More recent scholarly monographs on Vesalius and the history of the alum industry and the proposed history of technology are also noteworthy. Dr. Singer's lifetime of research and publication has been complemented by distinguished service as teacher and editor. At Oxford, at the close of the First World War, he became Lecturer on the History of Biology, a post that he resigned in the summer of 1921, when he removed to University College, London, to become Lecturer on the History of Medicine. In 1929, he gave the first course of Noguchi Lectures at the Johns Hopkins University and was Hitchcock Visiting Professor at the University of California. The success of this visit was marked by a second invitation, and in 1932 Dr. Singer returned to Berkeley. In 1930-31, he was elected Professor of the History of Medicine at University College, London, a chair he held until 1942, when he became Professor Emeritus. In 1950, he received the degree of Doctor of Letters from Oxford, largely on the basis of his profound investigations of St. Hildegard, and in 1936 Oxford University conferred upon him the honorary

degree of Doctor of Science. "Singer is probably the only man living who holds the Oxford doctorate in the three faculties: medicine, science, and letters."

Dr. Singer has been general editor of the series "Chapters in the History of Science," World's Manuals, Oxford, Clarendon Press; "Classics of Medicine" (Medical Classics Series), London, John Bale, Sons and Danielsson; with Henry E. Sigerist he edited the volume, *Essays on the History of Medicine Presented to Karl Sudhoff on the Occasion of His Seventieth Birthday, 26 November 1923*. In 1917 and 1921 there appeared the two massive tomes, edited by Dr. Singer, called *Studies in the History and Method of Science*. But the account of Dr. Singer in his *Festschrift* does not contain the information that volume 3, number 2, of ISIS contained the statement: "ISIS: an international review devoted to the history of science and civilization, edited by George Sarton and Charles Singer."

Science, Medicine and History contains essays written by British, American, and continental contributors, of whom the greatest number are American and British. The eminence of these contributors as medical men, scientists, and historians provides an index of the esteem in which Dr. Singer is held throughout the world. Fourteen of them, alas! had passed away long before the appearance of these two volumes. The essays are grouped into eight "books," the first seven of which treat the history of science and medicine as it unfolds chronologically. The eighth book includes essays "which deal with the history of individual subjects over long periods, with bibliographical and similar matters which find no place in a chronological arrangement." In a sense, then, the organization of the book emphasizes the multifold aspects of Dr. Singer's own historical research. The "books" are as follows: I, The Ancient World; II, The Mediaeval World; III, The Renaissance; IV, The New Philosophy; V, The Insurgent Century; VI, The Eighteenth Century; VII, The Nineteenth Century and After; VIII, Conspectus Generales.

It is, of course, impossible to review these ninety contributions, nor would it be fair to the contributors to single out one or two of them for special comment. Critical appreciations of those that are most important for the history of science and a notice of the others will appear in the Eightieth Critical Bibliography of the History of Science, now in preparation, which will be published later in the year in ISIS.

One of the most attractive features of this *Festschrift* is the inclusion of a number of intimate photographs of Dr. Singer and Mrs. Singer. (It is pleasant to record that Dorothea Waley Singer, a distinguished historian of science in her own right, is co-author of a number of the contributions listed in Dr. Singer's bibliography.) These photographs are not merely the conventional portraits in the studio manner, but also include a number of informal snapshots. Special attention may be called to one showing Dr. Singer working in his study, and another of Dr. and Mrs. Singer contesting at the chessboard. A complete bibliography of the published writings (and

those in progress) of Dr. Singer has been compiled by E. Ashworth Underwood, the general editor of *Science, Medicine and History.* This bibliography, arranged chronologically, includes unsigned book reviews in the *Times Literary Supplement,* and is made especially valuable by a subject and author index. One of the unusual features of the *Festschrift* is a monumental index covering the material in both volumes.

The cost of these two volumes is $45.00; hence, very few scholars will be able to purchase them. As a matter of fact, even libraries will have to face a difficult decision as to whether to invest this sum of money in a *Festschrift.* Might it not be more useful, for example, to use that $45.00 to fill in the library set of the books written by Dr. Singer himself? Without taking up the whole question of the place of *Festschriften* in modern scholarship, it may be asked whether in a world of high printing costs one might not more effectively honor a great scholar by publishing a thin pamphlet (containing his portrait, a brief biographical sketch, and a bibliography of his writings) to sell at one dollar, than to publish a pair of magnificent volumes at the prohibitive cost of $45.00? Certainly a bibliography of Dr. Singer's writings is an almost indispensable tool for research in the history of science; and it is, therefore, a matter of genuine regret that students of the history of science will not be able to afford to have a copy of it at their elbow.

Armed Forces Medical Library Catalog, 1952. Washington, The Library of Congress, 1953. iii + 813 pp. $17.50.

Reviewed by FREDERICK G. KILGOUR, *Librarian of the Yale Medical Library.*

THE first volume of the Armed Forces Medical Library Catalog to contain an *Authors* and a *Subjects* section (Part One and Part Two) was the 1951 volume; for 1949 and 1950 the Library published its *Author Catalog* only, although the 1950 volume did have a Subject Index. Like its predecessor, the *Index-Catalogue of the Library of the Surgeon General's Office,* its primary purpose is to furnish a bibliography of publications for use in the treatment of patients and in medical research. Unlike the *Index-Catalogue,* it contains only books. The Library publishes its monthly *Current List of Medical Literature* to replace the periodical indexing of the *Index-Catalogue.* The *Armed Forces Medical Library Catalog* and the *Current List* have been remarkably successful where the *Index-Catalogue* had failed. These two publications contain the most current, comprehensive listing of medical literature available.

The entries in the *Catalog* are photographically reduced catalog cards of the materials of medical interest which the Armed Forces Medical Library catalogued during 1952. Each page of the *Catalog* has nearly 50 reproduced cards in four columns. Most of the publications listed are current acquisitions, but some of them are re-catalogued items which had not previously appeared in Library of Congress catalogs. One serious omission from

the viewpoint of the historian of medicine is the exclusion from both Part One and Part Two of all titles published before 1801 and of all titles published in the United States before 1821. The Library's History of Medicine Division at Cleveland processes these early works.

Part Two, *Subjects,* is a dictionary subject catalog like that which most American libraries maintain in their card catalogs. The photographically reduced catalog cards for books on a given subject are arranged alphabetically by author under the subject heading. Because the chief function of the *Catalog* is its use in connection with treatment and research, only books published after 1925 are included in Part Two with at least one important exception—histories. Fortunately for the historians, the Library has elected to include in Part Two, irrespective of publication date, "1) important references and historical materials; 2) biographies and bibliographies; 3) periodicals; 4) congresses; 5) statistical documents; and 6) works about various institutions (i.e. hospitals, clinics, etc.)" In short, most secondary historical works appear under the subject headings, providing they were published after 1820 in the United States and after 1800 elsewhere. The exclusion of early secondary books from Part Two is not a serious omission.

Under the general heading "Medicine-History," which is but one of the many historical subject headings, there are twelve books of which four were published in 1952 and of which another four appeared in the previous four years. The last time that this subject heading appeared in the *Index-Catalogue* was in 1948 when volume X of the Fourth Series was published, and the next to the last time was 1928 in volume VII of the Third Series. Had the Library continued to publish the *Index-Catalogue* at an ever-decreasing frequency made necessary by the increasing quantity of medical literature, it is doubtful that many of us now interested in the history of medicine would have lived long enough to see "Medicine-History" in the Fifth Series. The present *Catalog* has dispelled this gloom. We now have an excellent up-to-date annual listing.

The *Armed Forces Medical Library Catalog* is an invaluable and unequalled bibliography of medical books and periodicals which every physician, medical scientist, and medical historian should know and use.

ERNEST M. LIPPA. *Captive Surgeon. Adventures and Misadventures of a Doctor in Red China.* New York, Wm. Morrow & Co., 1953. $4.00.

Reviewed by EDWARD H. HUME, *retired medical missionary to China, New York, New York.*

LEAVING Austria and a brilliant medical career in Vienna, Dr. Lippa practised medicine in a mission hospital in East China for eight years, then was interned by the Japanese forces in a crowded suburb of Shanghai till the war ended, and subsequently accepted a post in a Catholic mission hospital in the capital of Honan province, not far from the Yellow River, where this story begins. When Dr. Lippa started his service with the Communists, he discovered unusual parts of central Honan province—reservoirs of remark-

able structure built somewhere back in the T'ang dynasty, somewhere between 620 and 907 A.D. He also discovered (less pleasantly) the kind of behavior expected of foreigners in the "Liberated Area." The governor informed him that China was not a colony where foreigners might come and go as they pleased, but that everywhere they must obey the laws of the Communist Government. And foreigners were clearly not wanted unless they were willing to bow down to the Reds whose job it was "to obliterate their training in free thought and free speech, to forget everything but the all-powerfulness and all-wisdom of the great and mighty Communist State."

What bothered Dr. Lippa most was that the local people should imagine it possible in eighteen months to turn ignorant country lads into doctors, without previous training. He soon learned that the main thing for them was to pass their political examinations satisfactorily, and this absorbed practically ninety per cent of their time. This situation was what really made Dr. Lippa a captive; he was not within prison walls, but he was prevented at every point from carrying forward the surgical training of the people for which he had come to China. His contempt for their surgical methods and their treatment of patients is expressed on one occasion: "In the Liberated Area the Chinese medicine men love their little masks. They may forget to wash their hands before delivering a woman in childbirth, but they inevitably don their masks. They sometimes wear the masks when simply walking about the hospital grounds and would not need much encouragement to pop them on before chopping a few sticks of wood."

But one bright spot in all this wasteland was the discovery of a little Chinese nurse named Mary, a girl with an instinct for always doing the right thing and whose unconquerable spirit had kept her true to her religion in spite of Communist abuse. One day when Dr. Lippa and his Chinese colleague Chien were doing a difficult thyroid operation "an artery was severed, and the wound immediately became a pool of blood. Dr. Chien became panicky and blindly pushed artery forceps into the wound, making matters even worse. Without a word of instruction Mary pushed him aside and pressed a large pack of compresses into the wound. She had never before seen a thyroidectomy yet she had instinctively done the only thing to save the patient's life."

All through those days in central China Dr. Lippa's mind and spirit were in captivity which ended only when he got away.

I. BERNARD COHEN. *Benjamin Franklin: His Contribution to the American Tradition.* Makers of the American Tradition Series. Hiram Haydn and Donald Bigelow, General Editors. Indianapolis and New York, The Bobbs-Merrill Company, Inc., 1953. xxiv + [25]-320 pp. $3.00.

Reviewed by JOHN B. BLAKE, *Research Fellow, Department of the History of Medicine, Yale University School of Medicine.*

ONE of a series intended, so the general editors tell us, "for every literate American of whatever age and description," this book presents excerpts

from the writings of Franklin characteristic of his contributions to the American tradition, with extended comment by Professor Cohen. Certain sections are of particular interest to medical historians and physicians. As an example of Franklin's work in the service of the community, there is a quotation from *Some Account of the Pennsylvania Hospital* (1754) pointing out the value of this institution for training physicians as well as for caring for the sick poor. It is interesting to note Franklin's emphasis on the benefits to health conferred by his famous stove, while the bifocal glasses further illustrate his concern with inventions of practical utility. Franklin was equally interested in the application of scientific developments which he did not originate, and in this regard his introduction to William Heberden's pamphlet on inoculation is made available for the first time, except in medical journals, since 1759. Franklin's particular purpose in publishing and distributing this little handbook was to enable the "common tradesman or artificer," who could not afford to have a physician inoculate a numerous family, to perform the operation himself. In this as in other selections we see Franklin's desire to promote the health and well-being of the ordinary citizen.

Though many of the selections are familiar, Professor Cohen's stimulating and illuminating comment—the most valuable part of the work—enhances their meaning to the modern reader. It is particularly gratifying to see Franklin's medical contributions so amply represented in a volume intended for the general public. The book cannot take the place of more extensive biographies and collected writings, nor does it pretend to do so. It does provide a pleasant and worthwhile introduction to certain phases of the career of an outstanding American and a great man.

WILLIAM MACMICHAEL. *The Golden-Headed Cane.* A new edition with a foreword by James J. Waring, M.D. and a preface by William J. Kerr, M.D., containing the text and illustrations of the 5th edition, including the introduction by George C. Peachey and his annotations. Springfield, Illinois, Charles C Thomas, 1953, 185 pp., illus. $6.50.

Reviewed by ROBERT J. T. JOY, *Student Editor of this Journal.*

THIS is the seventh edition of a medical classic, the first since 1932. Medical historians need no introduction to the text; their concern will be with the editing. Dr. Kerr has chosen for this volume the 1922 edition of Dr. George C. Peachey, and has prefaced it with a description of the Gold-Headed Cane ceremony at the University of California School of Medicine where the tradition of the cane has been revived and used as an award to the outstanding member of the graduating class.

It might be of interest to record what appears to be an earlier attempt to revive the tradition of the cane. In the Historical Library at Yale, there is a copy of the second edition of the *Gold-Headed Cane* with the bookplate of Harvey Cushing. Accompanying the volume are several letters.

One is from the widow of Dr. H. C. Ernst of Boston to William H. Welch of Johns Hopkins, dated 1924, in which she informs him of the origin of the wood in the box containing the gold-headed cane which her husband sent to him. There are copies of correspondence which passed between Dr. Cushing and Dr. Frank B. Mallory of Boston, in 1935, which indicate that the Welch cane had passed on to Mallory, and had at some time been in the possession of Theobald Smith. Cushing suggests that brief biographies be written of the various possessors of the cane to be passed on with the cane. The matter seems to have been dropped there, for no further information can be secured.

For those who may not be familiar with the text, Macmichael's book contains an account of the lives of five great English physicians: John Radcliffe, Richard Mead, Anthony Askew, William Pitcairn, and Matthew Baillie, spanning the period from 1689 to 1823. The volume was written anonymously by Dr. William Macmichael in 1827, and a second edition, also anonymous, was published in 1828. The story is told by using the cane as a narrator. All five of the physicians sketched (and Macmichael too, for that matter), were physicians to the royal family, and the book is at its best in describing the practice of medicine when the patient is the King. There are numerous illustrations of the physicians, the Royal College of Physicians buildings, and the rulers of the period. Not the least valuable part of the book is its detailed account of the early origins of the Royal College of Physicians.

William Macmichael was an outstanding physician of his day. Born in 1783, he received his M.D. in 1816 from Oxford. He was a Radcliffe traveling fellow and gave one of the annual Harveian orations. He was physician to George IV and William IV, wrote on medical education, and was a mighty worker for the quarantine laws.

A new edition of the *Gold-Headed Cane* was published in 1884 by William Munk, who added biographies of Drs. Halford, Paris, and Mayo. The fourth edition (1915) was by Francis Packard, and was the first from the United States. This edition had a foreword by Osler, and was the first to include a biography and bibliography of Macmichael and to bear his name on the title page. The fifth edition (1922) was by Peachey who added his own explanatory footnotes below those of the original volume. The sixth edition was edited by Herbert S. Robinson in 1932 and contained a detailed account of previous editions and editors, portraits of Macmichael and his family, and reproductions of his handwriting.

This reviewer has only one minor complaint. Dr. Kerr has overlooked an opportunity to issue an integrated volume, with the special features of previous editions placed in an appendix. It would have been nice to have had in one volume the history of the book, as well as the original text. However, perhaps we shall have an eighth edition which will offer us all that has gone before.

Mr. Thomas has chosen for his format the style of the Peachey edition, and has presented an artistically pleasing volume.

MICHELE SAVONAROLA. *Il Trattato Ginecologico-Pediatrico in Volgare. Ad mulieres ferrarienses de regimine pregnantium et noviter natorum usque ed septennium . . .* edito da LUIGI BELLONI. Pel XLII Congresso della Società Italiana di Ostetricia e Ginecologia (Milano, 16-19 ottobre 1952). Milan, 1952, xxxv + 206 pp. 3 illus.

Reviewed by MARTHA TEACH GNUDI, *co-author with Jerome Pierce Webster of "The Life and Times of Gaspare Tagliacozzi."*

WITH the publication of this obstetrical-pediatric treatise, written in the vulgar tongue by Michele Savonarola "To the women of Ferrara on the regimen of pregnant women and of the new born up to the age of seven years," Luigi Belloni makes available for the first time the complete text of the earliest Italian work of its kind. Written probably between 1450 and 1460, the obstetrical sections antedate both the widely known *La Comare o ricoglitrice* (Venice 1596) of Scipione Mercuri and the earlier *Le medicine pertinenti alle infermità delle donne* (Venice 1563) of Giovanni Marinello, while the pediatric section antedates Paolo Bagellardo's *Libellus de ægritudinibus (et remediis) infantium* (Padua 1472). Savonarola's Italian treatise now takes its place alongside and complements Tractate VI of his own comprehensive Latin treatise, the *Practica de ægritudinibus a capite usque ad pedes*, in the history of both obstetrical-gynecological and pediatric writings that reach back to Soranus of Ephesus. It belongs as well among the series of specialized *regimina sanitatis* that flourished during the Middle Ages, of which the one written for Lorenzo de' Medici by the pioneer of pathological anatomy, Antonio Benivieni, was edited with commentary by Dr. Belloni in 1951.

Michele Savonarola, born at Padua about 1385, received his M.D. from the University of that city in 1413. He taught and practised medicine there with great repute until 1440, when he was called to Ferrara by Niccolò III d'Este as court physician, a post he held until his death in 1464. He also taught at the University of Ferrara from 1440 to 1450. He was honored by Leonello d'Este in 1443 with a diploma conferring Ferrarese citizenship on him and his descendants, and was created a Knight of Jeruselem by Pope Nicolò V. During his long life he wrote voluminously on medicine and later ascetic-moral subjects, never with much originality, but always with a keen awareness of human nature and a lively interest in the well-being of humankind. Sarton characterized him as "one of the greatest physicians of the first half of the fifteenth century," whose "works may be said to mark the beginning of a wholesome reaction against medical scholasticism," embodying "a revival of the clinical spirit" in his description of cases.

The *De regimine* is divided into three tractates, to the first of which, concerning the theoretical and practical problems of generation and con-

ception, Savonarola devotes a full third of the entire work—a reflection of the intense preoccupation with these subjects during the late Middle Ages among not only medical but philosophical and religious writers, including Dante and the Church fathers. He cites Aristotle most frequently in this section, while following Avicenna for the most part in his conciliatory attitude between the two classic systems of theory deriving from Aristotle and Galen. He discusses the best age for marriage and child bearing, and disapproves of the early marriage of girls too young to have become strong and robust in all their members. He recommends cold weather as most propitious, quoting the proverb "In June, July, August, my woman, I know thee not," and describes in frank detail what were considered the most advisable methods for ensuring conception, particularly of male offspring. He recounts the signs and symptoms of pregnancy, as well as the indications of the sex of the unborn child. Needless to say, the lore of his time contains much that is fantastic and curious, but on the other hand Savonarola has long been credited as the first, in his *Practica maior,* to have pointed to the narrow pelvis as the cause of difficult parturition. Here again he states "And thus nature has made woman wide below; wherefore those that are narrow, like men, give birth with greater labor and pain; for, my ladies, men should be wide above and narrow below, and women the opposite. For this reason the women of Bologna and Padua give birth more easily than the women of Ferrara" (p. 18). And in the second on childbirth he speaks of women who are "much too narrow at the kidneys, that is, slim hipped, for this narrowness is the cause of narrowness in the passage for the foetus" (p. 115). Also interesting is his definition of the fecund period as "after the cleansing" which in turn occurs "eight days after the completion of menstruation" (pp. 40-41).

The second tractate begins with a detailed regimen for the pregnant woman with specific directions as to which foods and drink she should take and which avoid, how much exercise, air, and rest she must get, and how she should guard against anger, sadness, and fear. The second chapter of this section, which embodies the essence of Savonarola's obstetrics, covers fifteen "accidents," that is, symptoms and ailments of pregnancy and childbirth, and their treatment. Avicenna is his chief source, although the Arabic writers are cited, as well as Galen and Hippocrates, "quel buon vecchione," and a few contemporaries such as his teacher, "mio doctore di medicina monarca," Giacomo della Torre of Forlì. But this is no mere compilation of "authorities." Savonarola speaks with the ease and assurance of his own long and varied experience, including a quintuplet birth he saw at Bassano. Dr. Belloni points out as particularly interesting his references to cephalic version, podalic extraction, and manual aid, as well as his disapproval of embriotomy on the live foetus, while indicating its frequent practice on the dead foetus. In speaking of the normal birth he refers back to his description of the child in the mother's body: "the foetus lies with its neck and shoulders curved towards the lower part of the womb, for in such

a position it better protects the heart, and rests its hands on the knees with the nose between and the eyes above them: thus it lies in a curved position with its head toward the front and its feet to the rear" (p. 39). And he continues with a vivid analogy: "Thus when it wishes to come forth at the time decreed by nature, it extends hands and arms along the thighs, as do children when they bathe and wish to dive into the water, straightening their hands along their sides, and throwing themselves in the water head first; so by nature does the foetus, in order to come forth more easily" (p. 112). Elsewhere he speaks of the "friar not yet having presented his head or tonsure" (p. 123) and of "the friar knocking at the door" (p. 119).

The birth chair described here is of a much more developed type—having a back, sides, and arm rests—than the primitive one pictured in the 1547 and 1599 editions of his *Practica maior*. Since the *De regimine* was written ten to twenty years later than the *Practica*, this difference may represent a development in Savonarola's ideas; but on the other hand, the 1497 and 1561 editions contain no illustrations of the chair, and only further research can establish the source of the illustrations in the above cited editions. Unfortunately, the two known codices of the *De regimine* (neither an autograph) do not show the marginal drawing promised in the text:

> This chair is to be of thick strong wood so that it is firm and heavy and not easily movable, two feet (*piedi de vescovato*) in width, and a foot and a half in height, closed on the sides with boards; and the seat, that is, its depth and expanse is to be a foot and a half, but it must be curved and rounded inwards at the front so that the creature may descend easily, and also the mother may sit; on either side there are to be arm rests so that she can support herself with her hands when necessary, and the back rest is to be high. To be better understood, I will depict the chair in the margin, even though roughly. Thus the proud one sits leaning on this chair—and truly she merits such a regal seat in bringing so noble a fruit into the world with such great labor—and behind her is placed a cushion so that she suffers no harm from the hardness of the wood; and when she has her pains, pushing her back against the boards of the chair, she can send all her impetus and force forward and can thus aid the birth" (p. 120).

The third tractate, devoted to the rearing of children through the first seven years, opens with the duties of the midwife in the physical care of the new born, and continues with problems of the nursing mother and, when necessary, the choice of a wet nurse, although Savonarola strongly urges the mother to nurse her own child. Most of this section is concerned with a series of remedies for childhood ailments "from head to toe," including advice on diet, teething, bathing, and exercise. Mothers are admonished to apply the remedies with prudence and caution, for "I have addressed these simple household remedies to women so that they may take measures at the first sign of illness in children, but if the illness continues, I advise them to call a skilled physician" (pp. 191-92). Rhazes and Avicenna are here the most frequently quoted authorities.

The final chapter, on the education and moral training of the child, is the only part that has previously been published (from the Vatican codex in J. Schnitzer's *Savonarolas Erzieher und Savonarola als Erzieher,* Berlin, Schöneberg, 1913). Here emphasis is placed on the good example set by parents and teachers. The tutor should be old, wise, and respected, for more can be gained through respect than from blows. Study must be well balanced with play and exercise, and above all children must be taught to have "an honest tongue" and must not be spoiled. "For virtue is not in us by nature, but must be acquired through discipline and good habit" (p. 199). "Remember how greatly virtue exalts man . . . and if you do not have material things to leave your children, take care that they be virtuous and friends of God" (p. 200). These precepts gain interest when we recall that Michele Savonarola was the first teacher of his grandchild, Fra Girolamo Savonarola, the great preacher and martyr of Florence, who taught that "the greatest virtue of all is the true love that man acquires in loving God" (p. 197).

The language of the *De regimine* is not a literary Italian, but a mixture of the Paduan and Ferrarese dialects that presents various difficulties of interpretation but gives it great charm. Written as if indeed addressed orally to the women of Ferrara, it possesses the direct immediacy of the spoken word. A delight to read, it is earthy, colorful, and free of pedantry, if one ignores the frequent Latin quotations, as undoubtedly his readers did. Savonarola advises, scolds, admonishes, exhorts, coaxes, and even tries to shame his ladies into following his precepts, while recognizing sadly that human nature more often willfully follows its own inclinations. By thus speaking in familiar, every-day language and with homely simile and example, he achieves his purpose of bringing practical useful knowledge to mothers, fathers and midwives, as a guide to help them solve the simpler problems arising from the bearing and rearing of children. "I have wished to compose this little volume in your name and for your succour . . . because I am a good father to you, as you have called me, my daughters, thinking I could bring great help to you in the labors and perils you incur in your impregnation and parturition. . . . And to enlarge it, I wished to write additionally for the aid of your children, brought to birth by you with such labor and danger, to help save their lives. For, considering that nothing is more pleasing or more welcome than life itself, and as my book is written to help preserve the life of both [mother and child], it appears to me that I have repaid in large part the many benefits and love received from you. . . . Therefore the great advantages you will derive from it must silence those tongues that will reproach me for writing in the vernacular. . . . But, my ladies, I have wished to do this as a testament naming you, my daughters, as my heirs, and since you do not know the literary language, I have had to write in the vernacular, looking to neither honor nor glory . . ." (pp. 3-4).

Ably combining the humanistic and philological heritage of his two great mentors, Arturo Castiglioni and Giuseppe Rotondi, Luigi Belloni introduces the text in a comprehensive essay, with bibliography, on the life and writings of Savonarola and his place among the writers of the fifteenth century, together with a masterly analysis and comparative evaluation of the treatise itself. He includes a description of the two known codices from which he has established the text, and appends variant readings to each section. With this volume he has added a valuable source book to the early literature of obstetrics, gynecology, and pediatrics, and has evoked the living voice and robust personality of a genial old man who was a skillful physician and surgeon five hundred years ago.

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